



f 80





ON THE ROAD TO BIRMINGHAM IN 1837 *by Charles Dickens*

It was quite dark when Mr. Pickwick roused himself sufficiently to look out of the window. The straggling cottages by the roadside, the dingy hue of every object visible, the murky atmosphere, the paths of cinders and brick dust, the deep red glow of furnace fires in the distance, the volumes of dense smoke issuing heavily forth from high toppling chimneys, blackening and obscuring everything around; the glare of distant lights, the ponderous waggons which toiled along the road, laden with clashing rods of iron, or piled with heavy goods—all betokened their rapid approach to the great working town of Birmingham.

As they rattled through the narrow thoroughfares leading to the heart of the turmoil, the sights and sounds of earnest occupation struck more forcibly on the senses. The streets were thronged with working people. The hum of labour resounded from every house; lights gleamed from the long casement windows in the attic stories, and the whirl of wheels and noise of machinery shook the trembling walls. The fires, whose lurid sullen light had been visible for miles, blazed fiercely up in the great works and factories of the town. The din of hammers, the rushing of steam, and the dead heavy clanking of the engines, was the harsh music which arose from every quarter.



Publication No. 260

December 1951

Copyright reserved

HENRY HOPE & SONS LTD
HALFORD WORKS · SMETHWICK
BIRMINGHAM · Telephone · SMethwick 0891
Telegrams · Conservatory Telex Birmingham

London Office & Showrooms · 17 & 18 BERNERS STREET, W.1

Telephone · MUSeum 8412
Telegrams · Buntline Rath

HOPE'S

Makers of fine

WINDOWS



*A catalogue of metal
windows for drawing-
office use, giving speci-
fications, sections and
useful information on
design, fixing & glazing*

HOPE'S

Metal Windows

Our Sections Our sections which were numbered 2 and 3, are now called medium and heavy and are fully illustrated on pages 8 to 15. These sections differ only in weight and strength and are of universal application—that is to open outwards, to open inwards or on pivots and to glaze either from the outside or the inside.

The outer frames may be made with flanges of equal length for fixing to ordinary rebates or with long flange to suit different forms of building construction. The extreme sizes which are stated for each type of window should not be exceeded.

Weatherproof Our medium and heavy sections opening outwards, are weatherproof in practically any situation where a building can be conveniently placed. They have been proved all over the world, in exposed places by the sea, and at high elevations. Casements opening inwards or hung on vertical pivots are weatherproof under ordinary conditions but cannot be relied upon during wet and stormy weather in very exposed places.

Important In cold and temperate climates, casements should open outwards. An outward-opening casement is weathertight, is not in the way of furniture or curtains, and serves as a wind deflector, giving admirable control of ventilation. Blinds, curtains and flyscreens are all easily applied. Inward opening casements should be used where sun-shutters are a necessity.

Sub-frames We have developed a complete series of sub-frames suitable for any of our windows and we strongly recommend their use. The frames should be set in place as the building goes up, when, after the plastering is completed, the windows can be set and glazed, floor by floor, under clean conditions. We have carried out many large contracts in this way, to the complete satisfaction of the architects and the owners.

Setting & Glazing It is most important that our windows should be set and glazed by our own workmen. We keep a specially trained staff for this work and undertake the supply of all labour or the superintendence of window fixing in all parts of the world. We accept full responsibility for the satisfactory working of all windows which are fixed by our men, but we cannot be responsible otherwise. See fixing and glazing instructions on pages 46, 47 and 48.

Specification

Bars Each section is of British solid rolled steel, well straightened and free from hammer marks or distortions of any kind.

Joints The corners are all machine cut, electrically welded and neatly cleaned off, making both casement and frame each a solid unit without the application of loose pieces.

Plates & Brackets The handle plates and brackets are of mild steel, accurately machined and electrically welded to the casements.

Hinges Are of steel with a tinned bronze pintle drilled for oil, and stainless steel washers. One part welded to the frame and the other part riveted to the casement.

Pivots All pivoted casements and those hinged at bottom are hung on Hope's bronze cup pivots. Casements hinged at top are either hung on cup pivots or hinges at our discretion.

Hardware Is of 'engineering' quality, made in our own factory to designs which have been carefully developed by trial over many years. Each fitting is described and illustrated on pages 50, 51 and 52.

Galvanizing All windows are HOT-DIP GALVANIZED after manufacture and despatched unpainted.

Fit & Finish The best. Only first-class, well-trained artisans are employed upon the finishing processes.

Inspection All windows are subjected to a rigid inspection as to size, quality and finish before despatch.

Form of Specification for Architects' use—

Windows to be of British rolled steel, hot-dip galvanized (or extruded bronze) manufactured and fixed by Henry Hope & Sons Ltd., fitted with Hope's bronze hardware of designs to be selected. State whether to be glazed from inside or outside and whether glazing beads are required, also quality and thickness of glass.

GALVANIZING

In 1937 we were operating a complete galvanizing and assembly plant in our new factory at Wednesbury and we have since then made advanced technical improvements and extensions covering the whole of our products.

Steel windows are frequently subjected to exposure and rough treatment on building sites and whereas painted windows are often rusty before they are installed, galvanized windows suffer no injury.

Practical Tests Galvanized angle bars exposed in Birmingham for more than 25 years without painting showed no sign of corrosion.

Hope's galvanized windows supplied to a Marine Fort in the Humber in 1941 (see photograph below) showed no sign of corrosion after seven years' exposure without painting.

Laboratory Tests Taking a large number of windows at random from several days' work as they come through the plant, our Research Department reports that they withstand an average of 17 dips by the Preece test.

The Preece test consists of dipping the article in a standard copper sulphate solution for one minute and on a copper deposit showing itself on the steel, this discloses the destruction of the zinc coat.

British Standard Specification 729/1937 specifies that a galvanized article must withstand 4 dips by the Preece test.



MARINE FORT IN THE HUMBER

It may be asked—why has it taken so long to determine the use of hot-dip galvanizing for steel windows when the process has been so well known for so long? The answer lies in the fact that it is not easy to galvanize a steel window, and that this cannot be done successfully in a conventional plant where articles of much greater bulk or weight have to be treated.

This difficulty compelled us to examine the problem very thoroughly with the result that we have installed a special plant at Wednesbury which produces clean and thoroughly protected work.

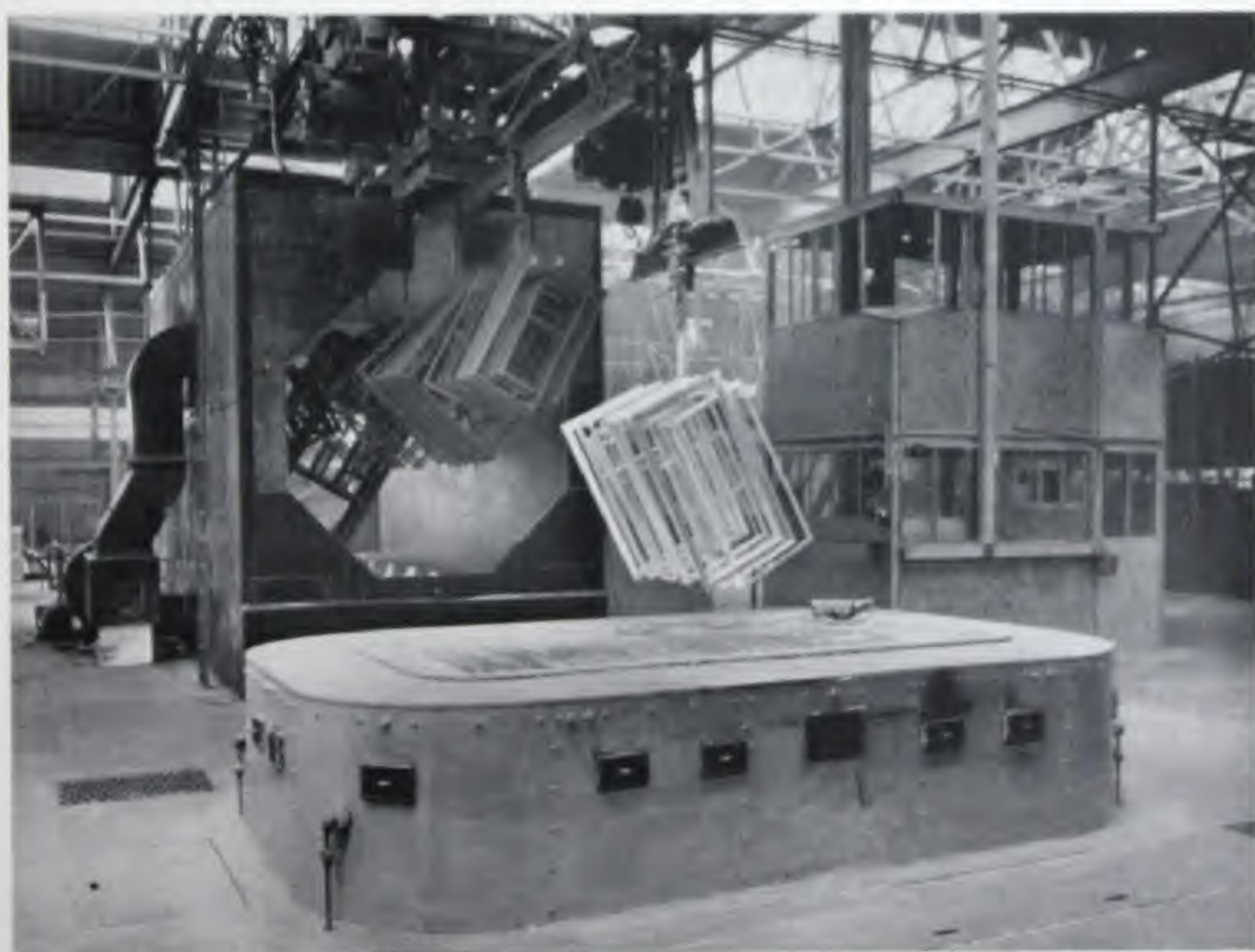
The question is often asked if the galvanized surface of a window will accept paint; the answer is that if the window is exposed for the few weeks that nearly always elapse between fixing and painting, the paint will stick well because the shiny surface will have been sufficiently etched by atmospheric action.

We recommend natural etching by atmospheric action in preference to chemical etching, but we will apply chemical etching when requested to do so if paint has to be applied immediately.

All our windows are delivered galvanized but not painted and there is no need to paint for protection for four or five years and even longer in some atmospheres.

In chemical works, gas works and similar situations, windows must be specially treated and each case must be examined on its merits before a recommendation can be made.

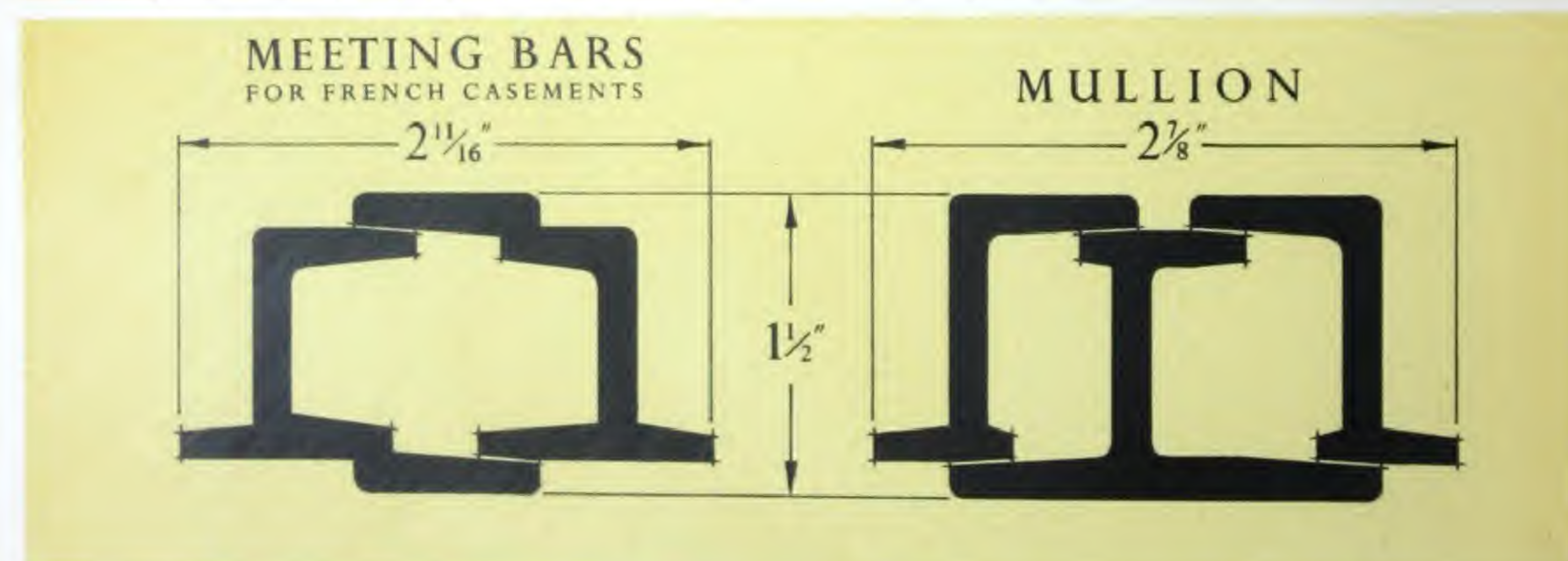
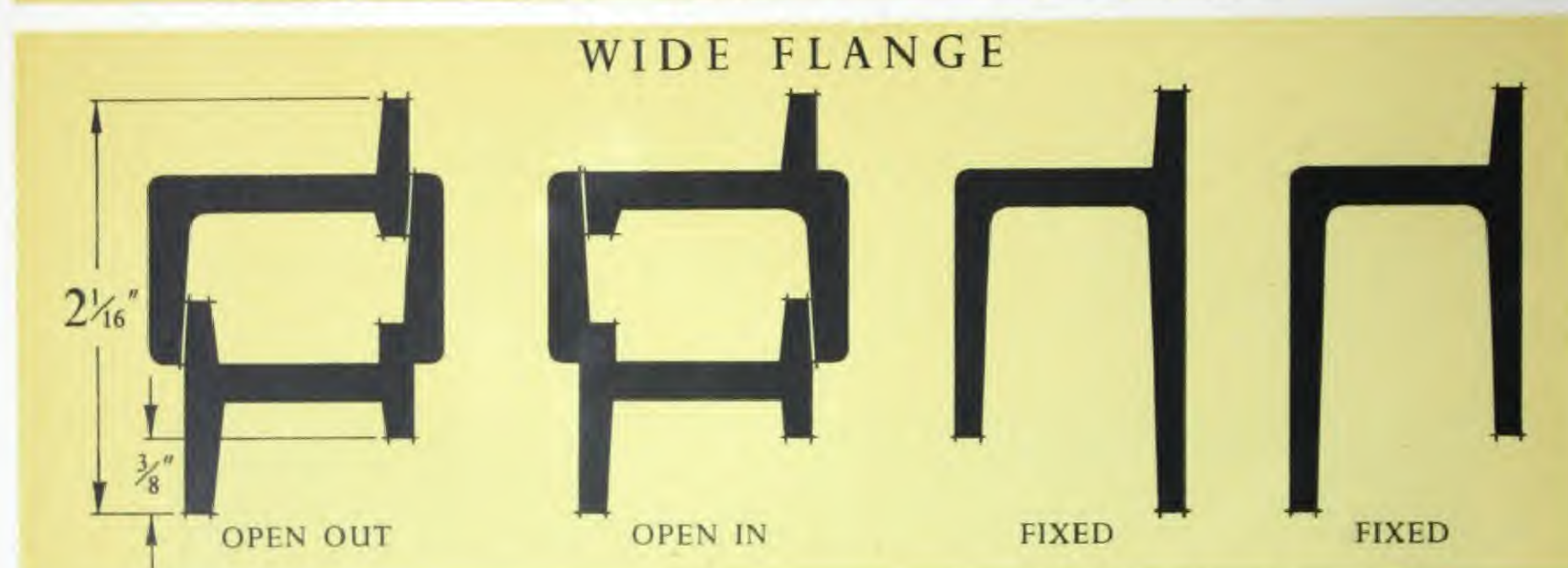
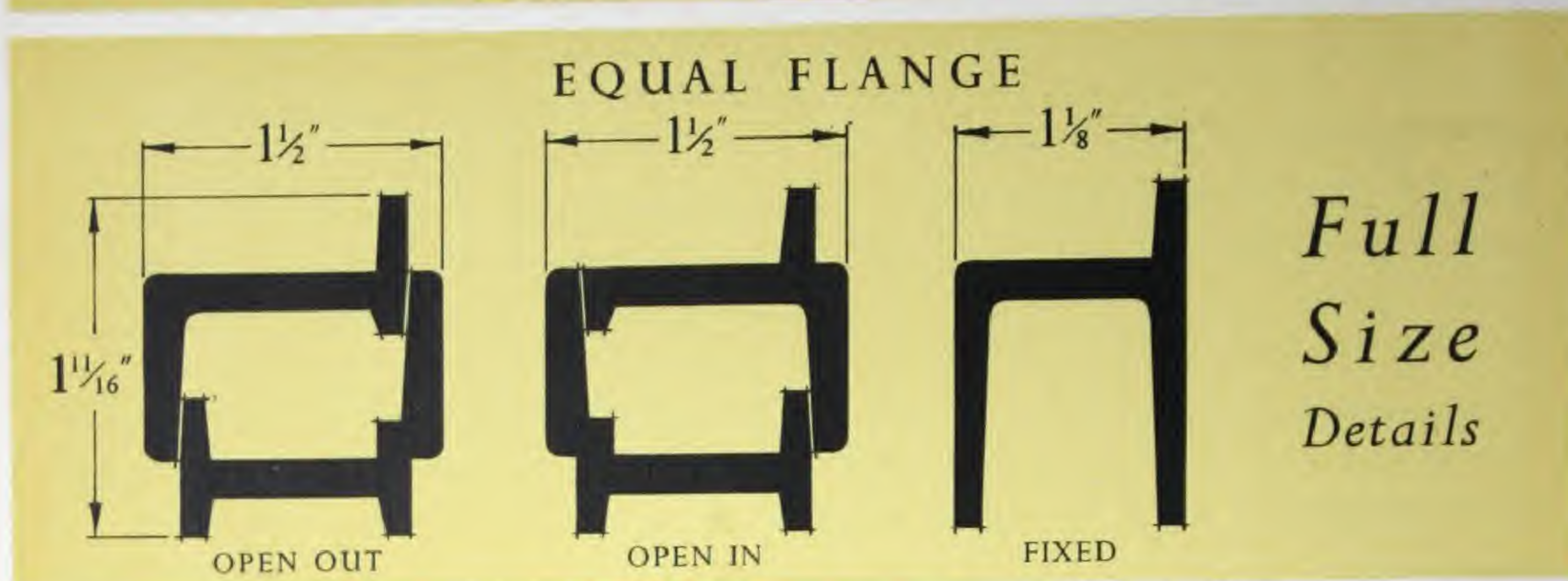
We have conducted large-scale trials for many years and can safely affirm that there is no process for rustproofing steel windows that can hold a candle to hot-dip galvanizing.



PLANT No. 3, WEDNESBURY WORKS

HOPE'S SECTIONS

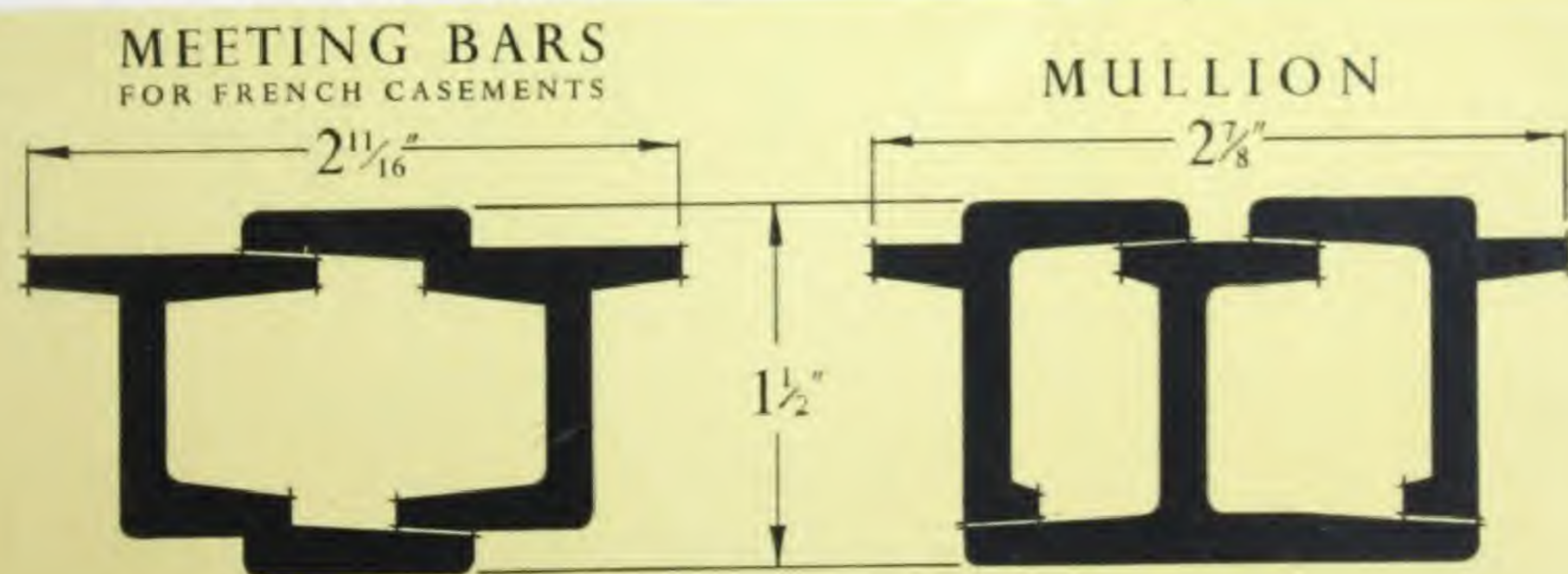
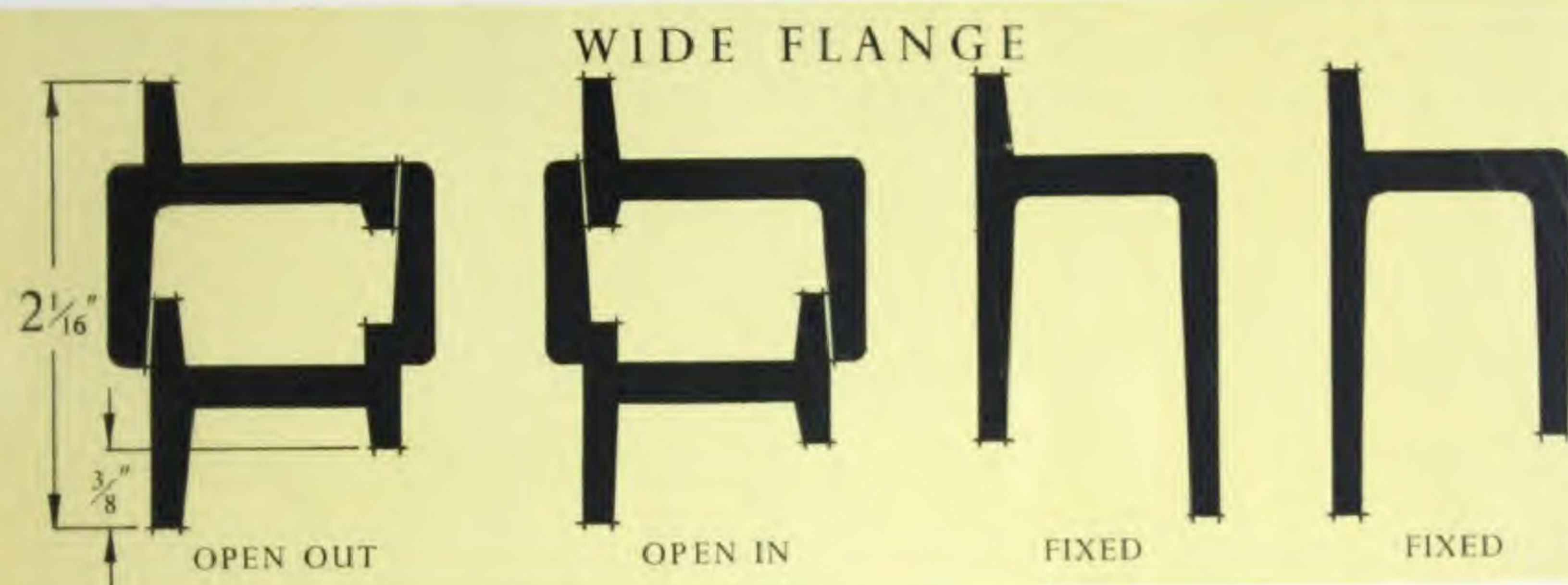
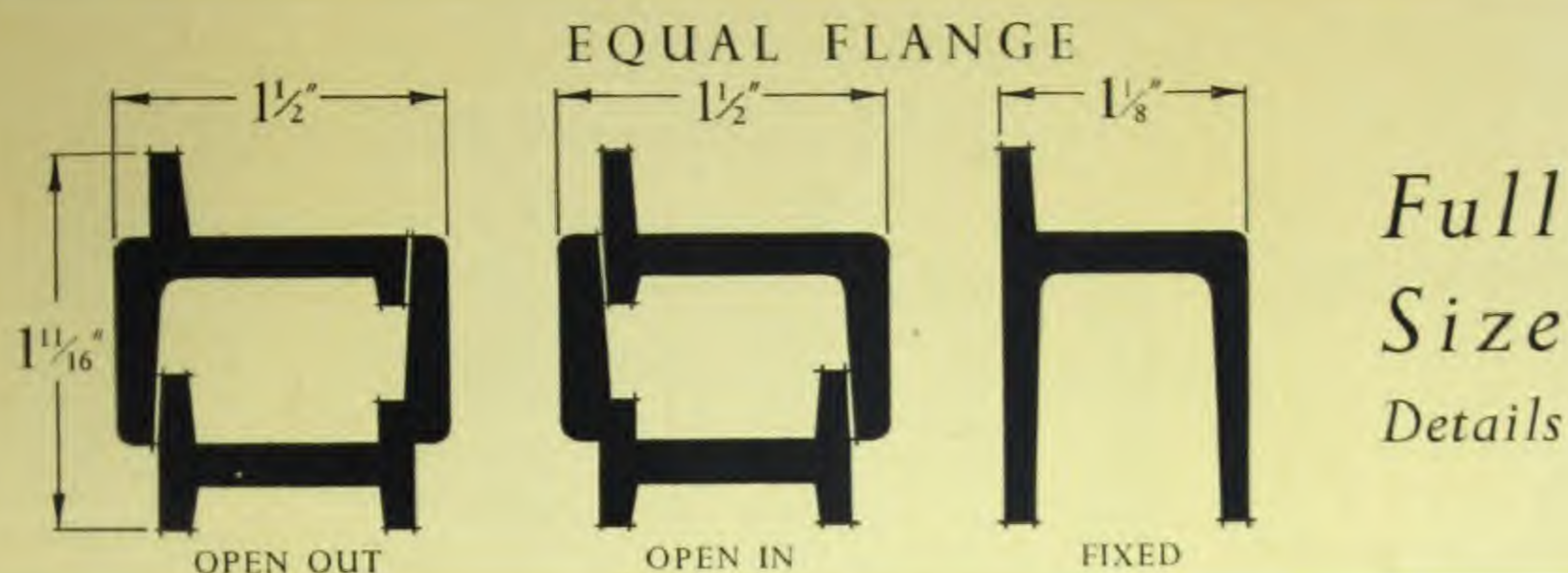
MEDIUM SECTION · *Outside Glazing*



These sections provide the same sight lines and glass plane for opening casements and adjoining fixed lights. Similar sections can be supplied in extruded bronze or aluminium.

HOPE'S SECTIONS

MEDIUM SECTION • *Inside Glazing*

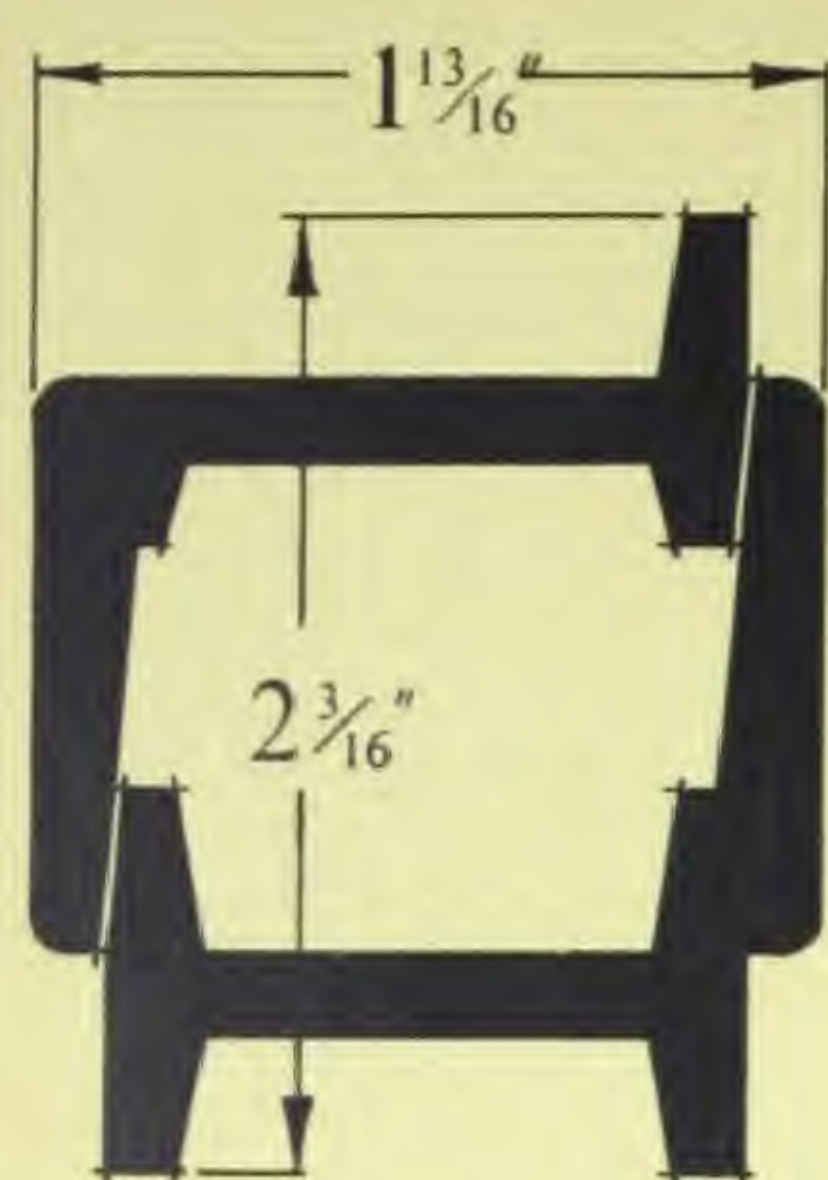


The footnote on the opposite page applies equally to the sections illustrated above and also to those on pages 10 and 11.

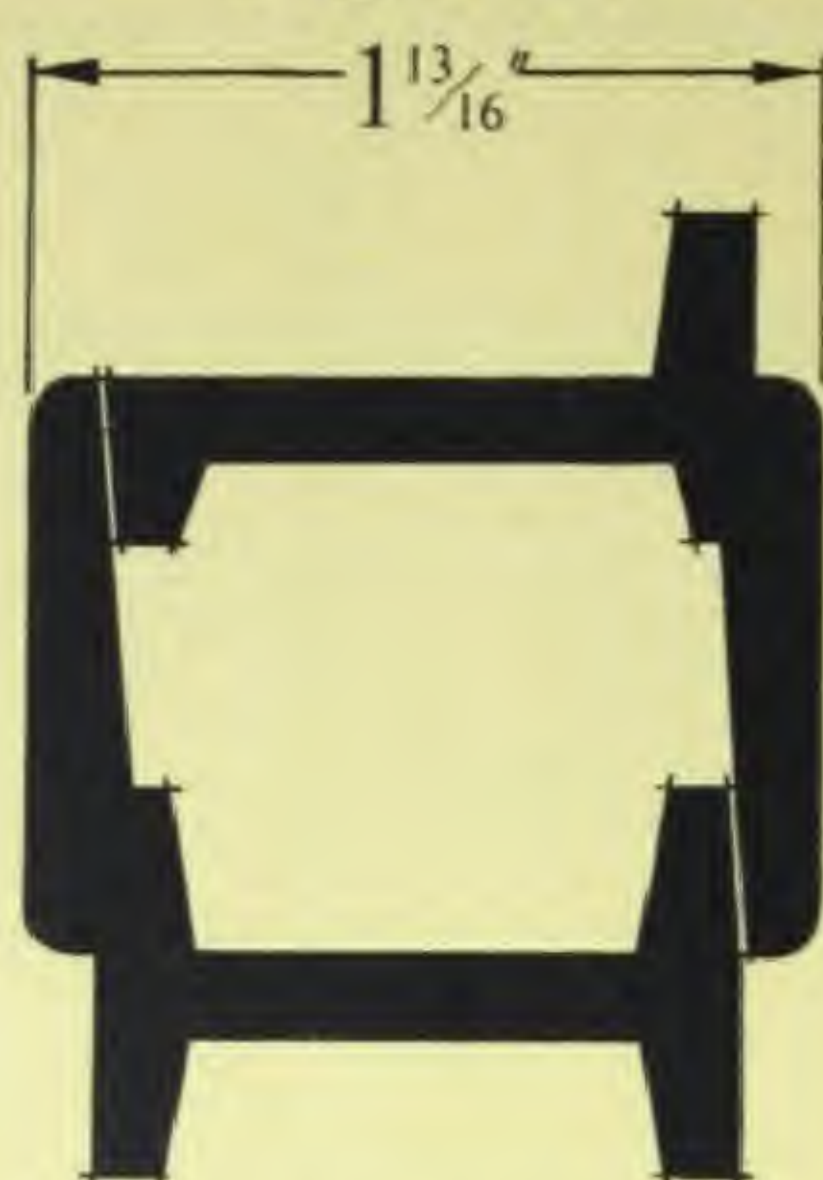
HOPE'S SECTIONS

HEAVY SECTION • *Outside Glazing*

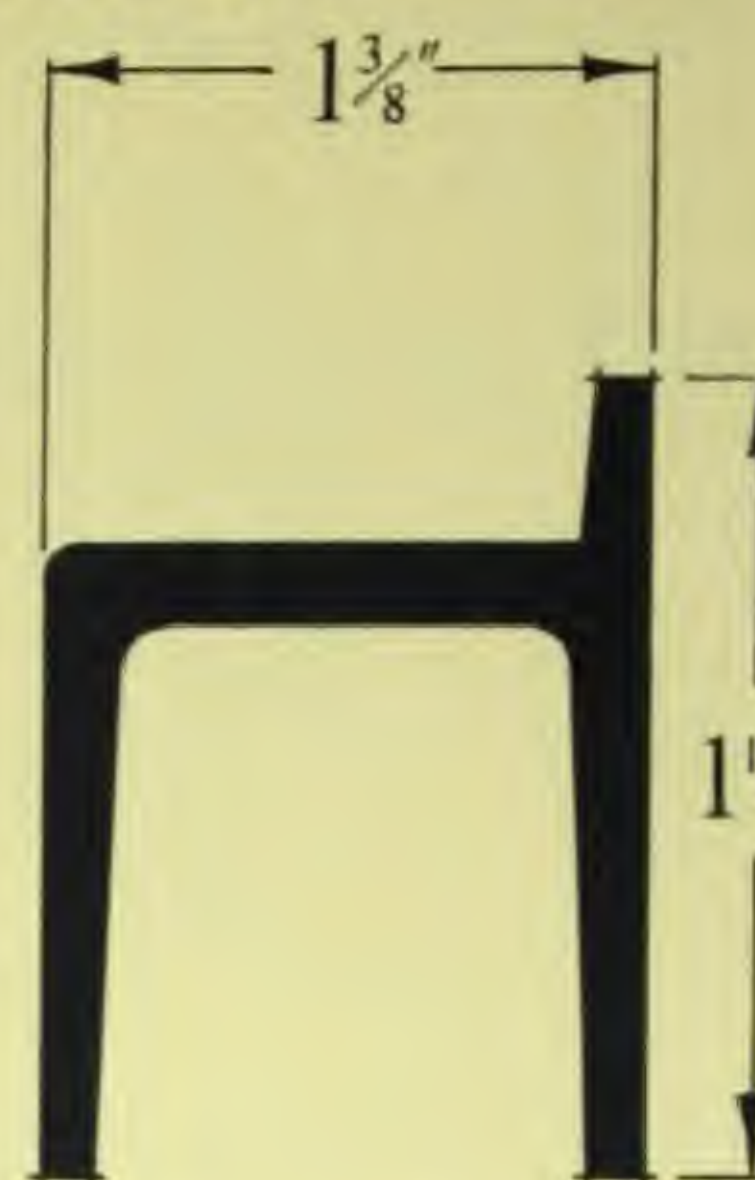
EQUAL FLANGE



OPEN OUT



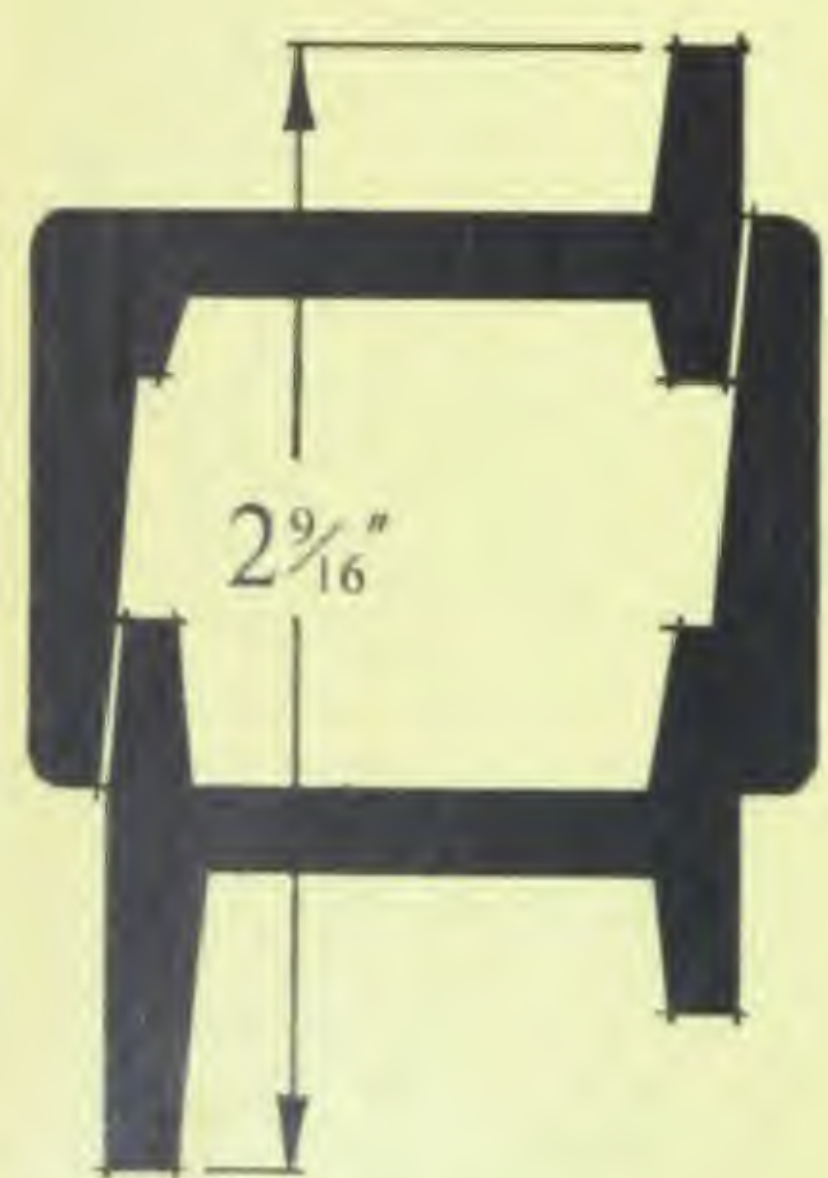
OPEN IN



FIXED

*Full
Size
Details*

WIDE FLANGE



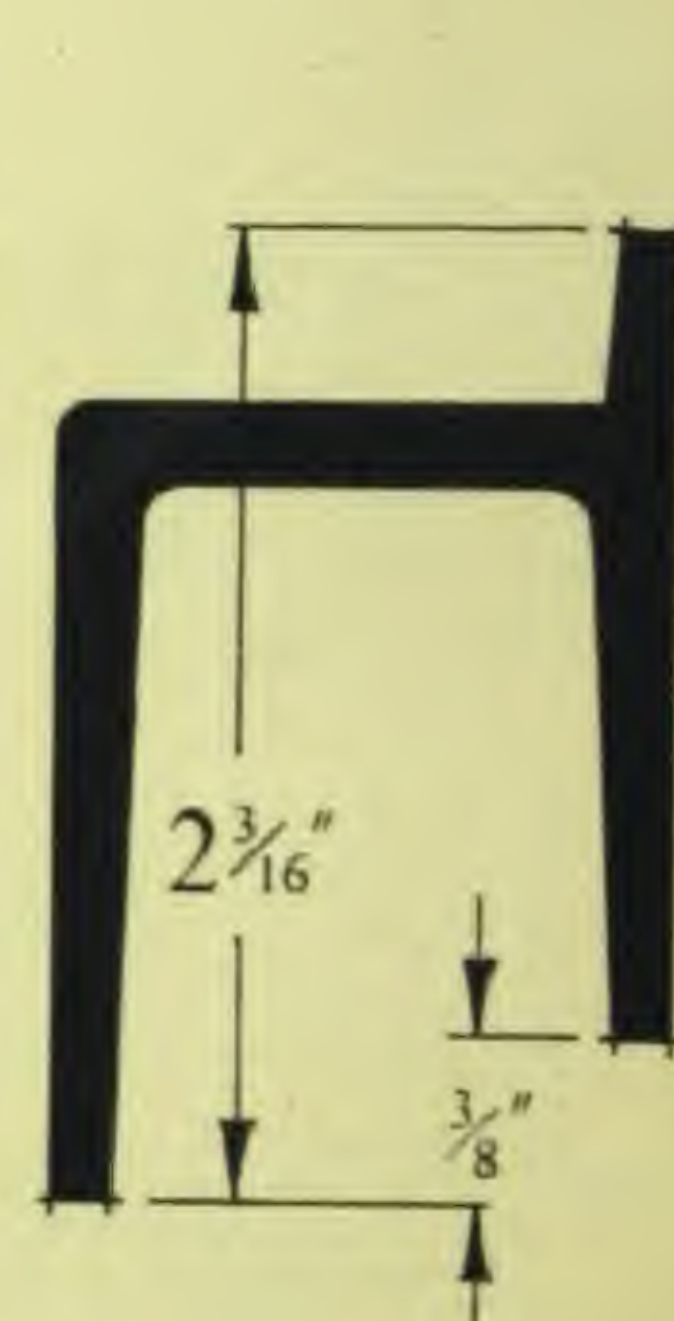
OPEN OUT



OPEN IN



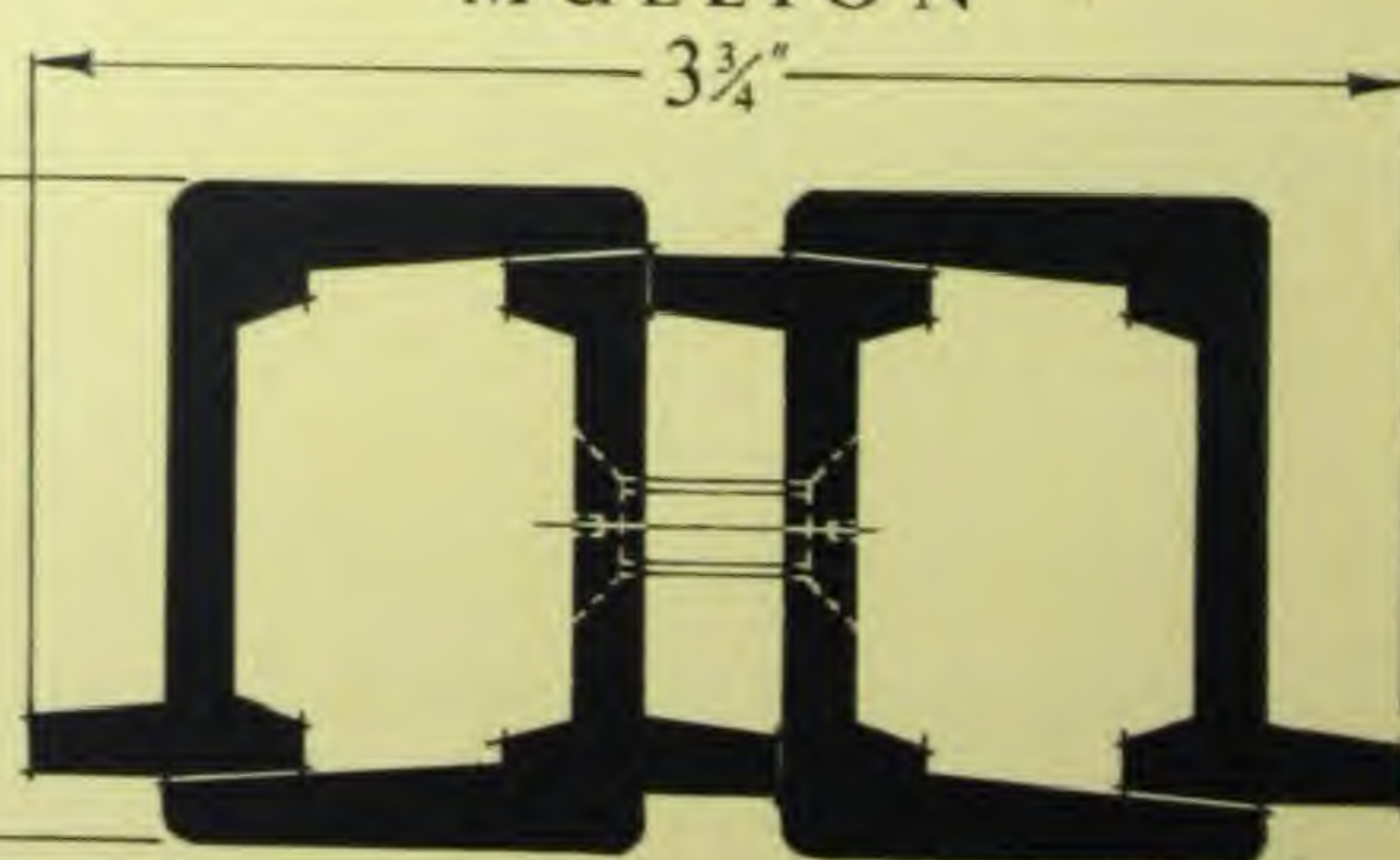
FIXED



MEETING BARS



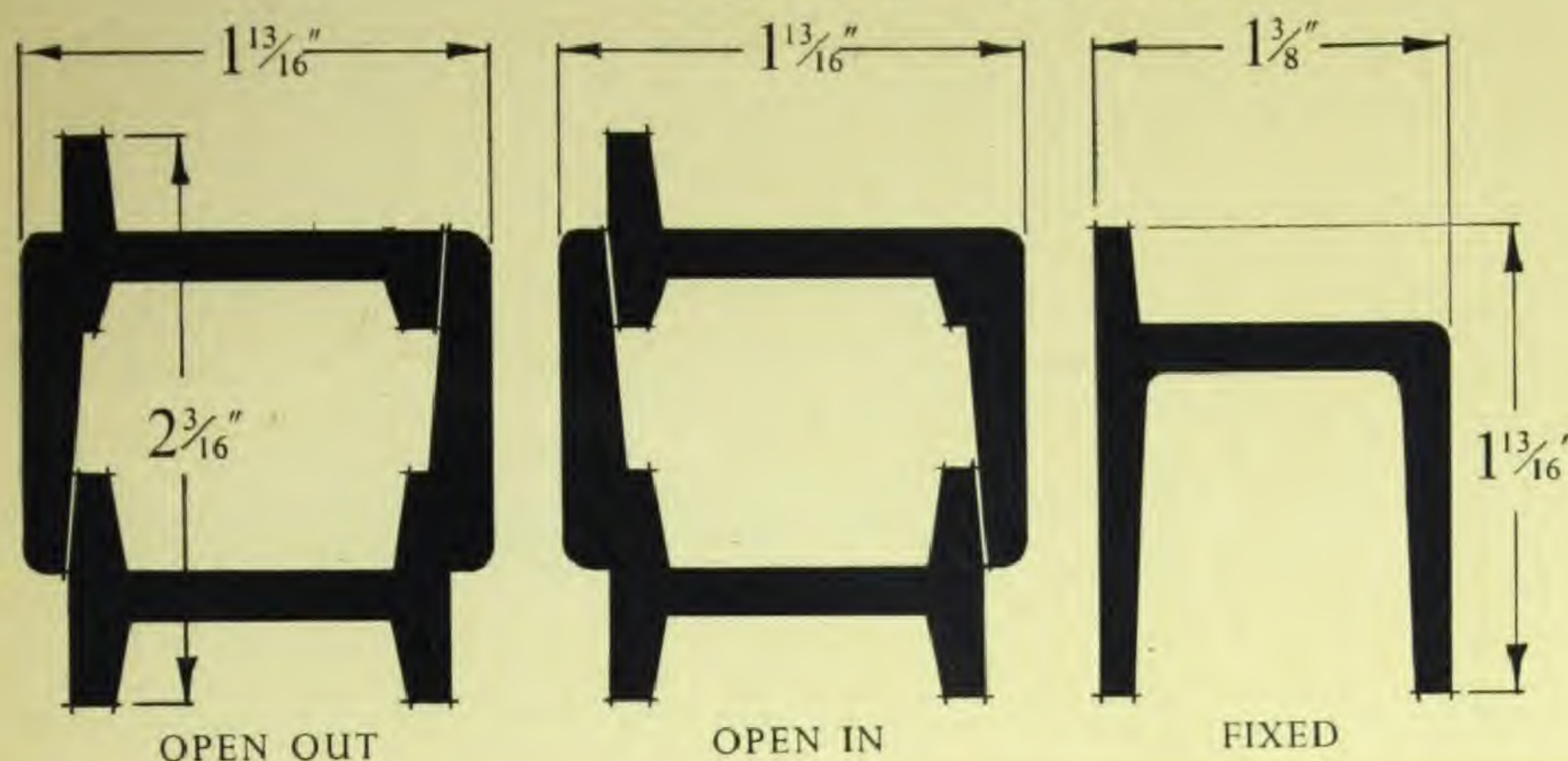
MULLION



HOPE'S SECTIONS

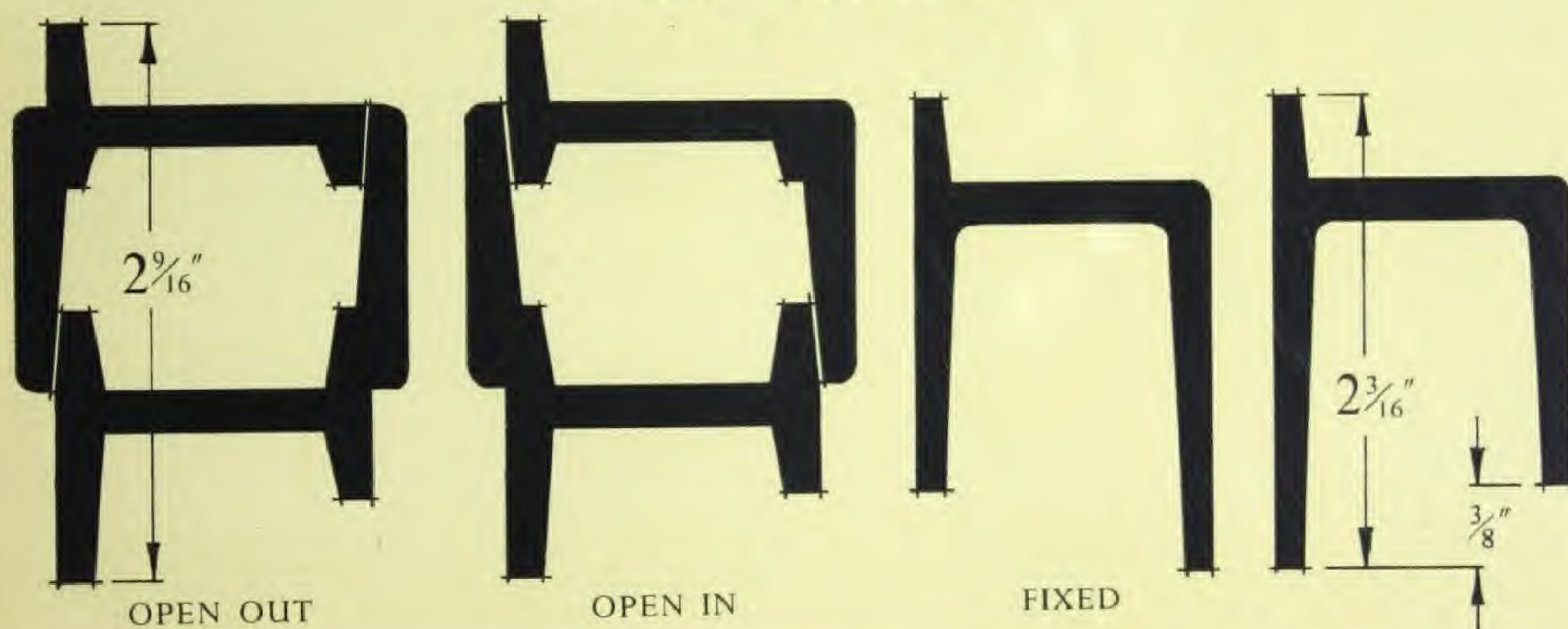
HEAVY SECTION • *Inside Glazing*

EQUAL FLANGE

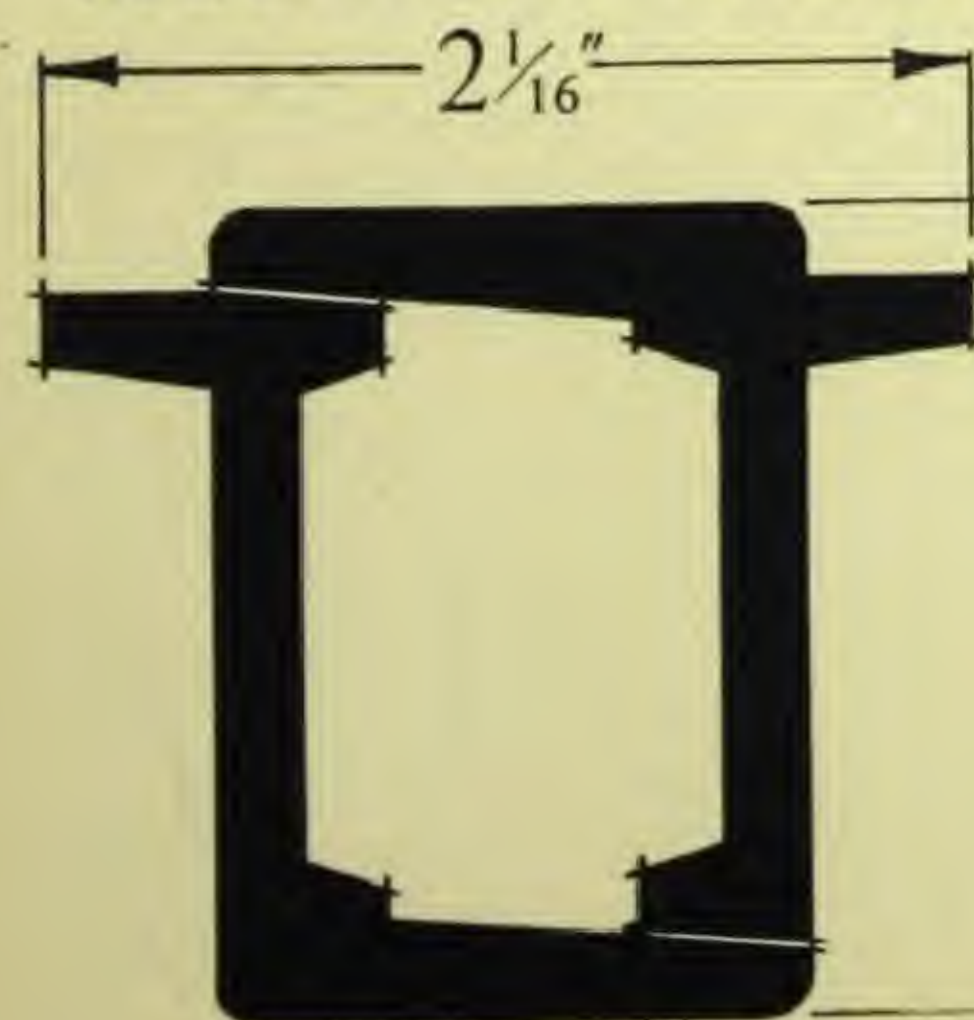


*Full
Size
Details*

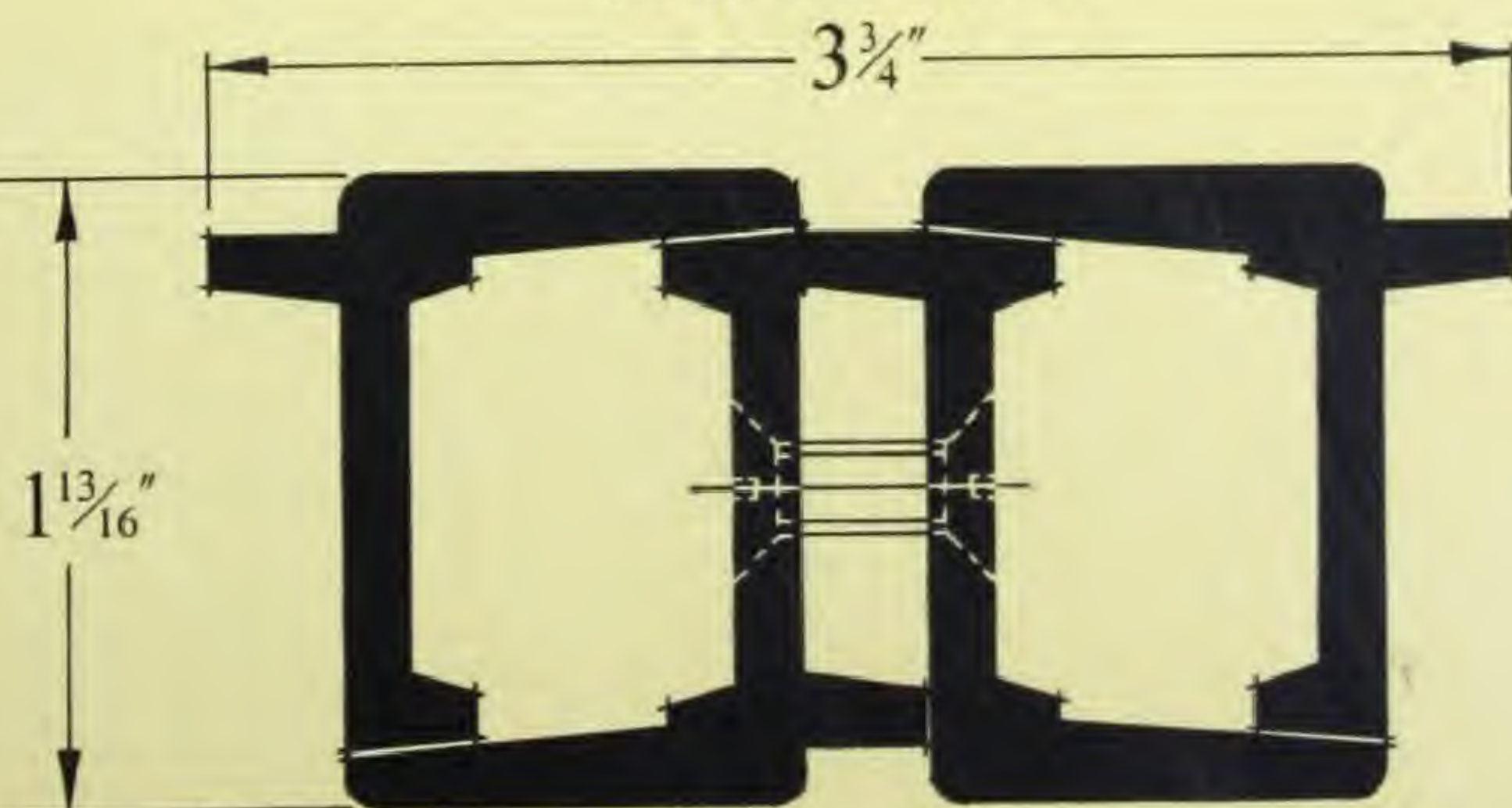
WIDE FLANGE



MEETING BARS



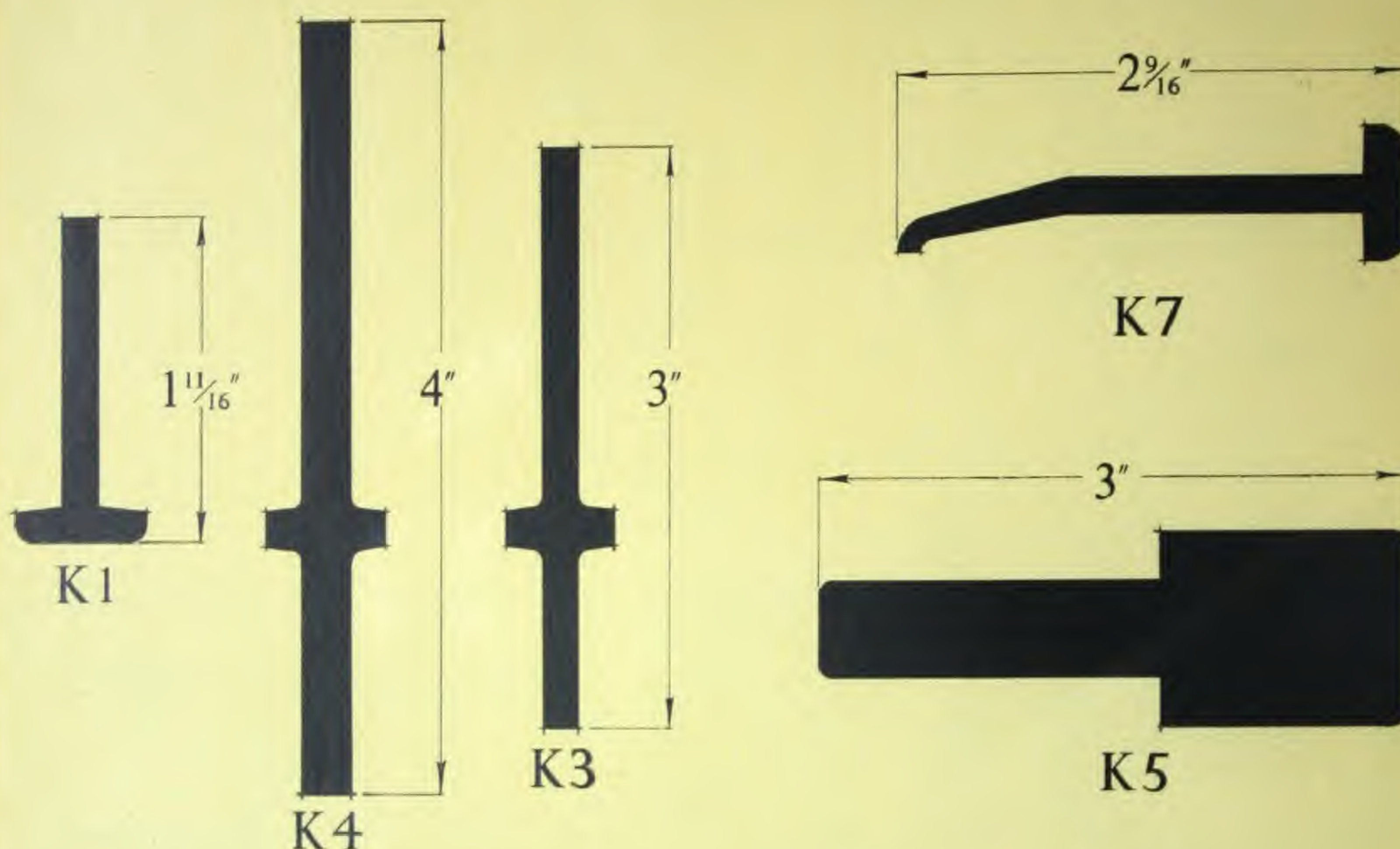
MULLION



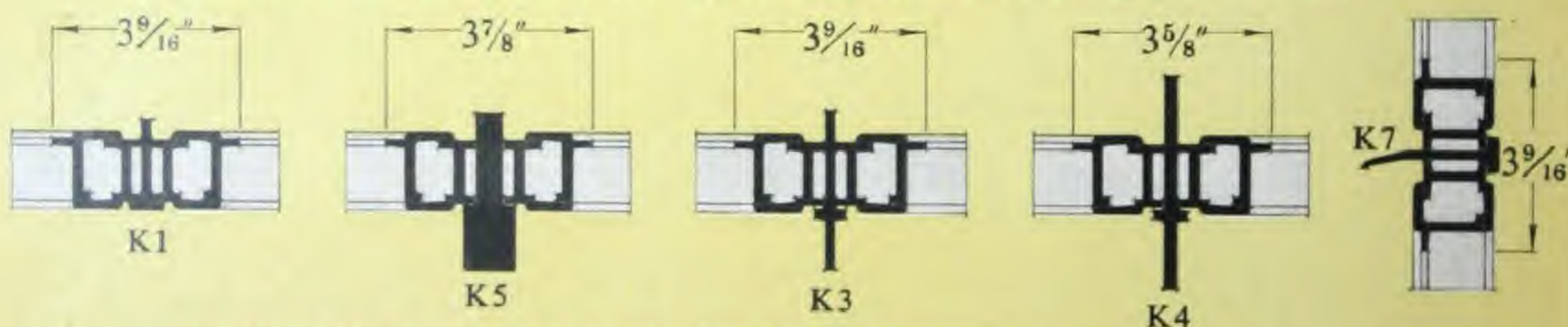
HOPE'S SECTIONS

COUPLING BARS · *Full Size Details*

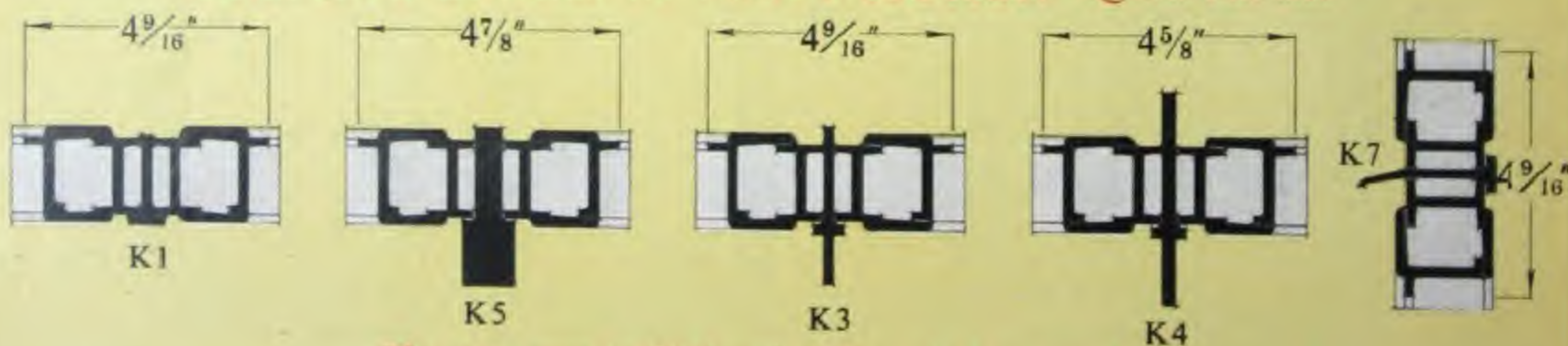
For windows of moderate size section K1 is the best coupling bar for vertical and K7 for horizontal members; for windows exceeding 7 ft. 6 in. in height, or for exceptionally exposed positions, use sections K3, K4 or K5.



COUPLING DETAILS IN MEDIUM SECTION · *Quarter Full Size*



COUPLING DETAILS IN HEAVY SECTION · *Quarter Full Size*

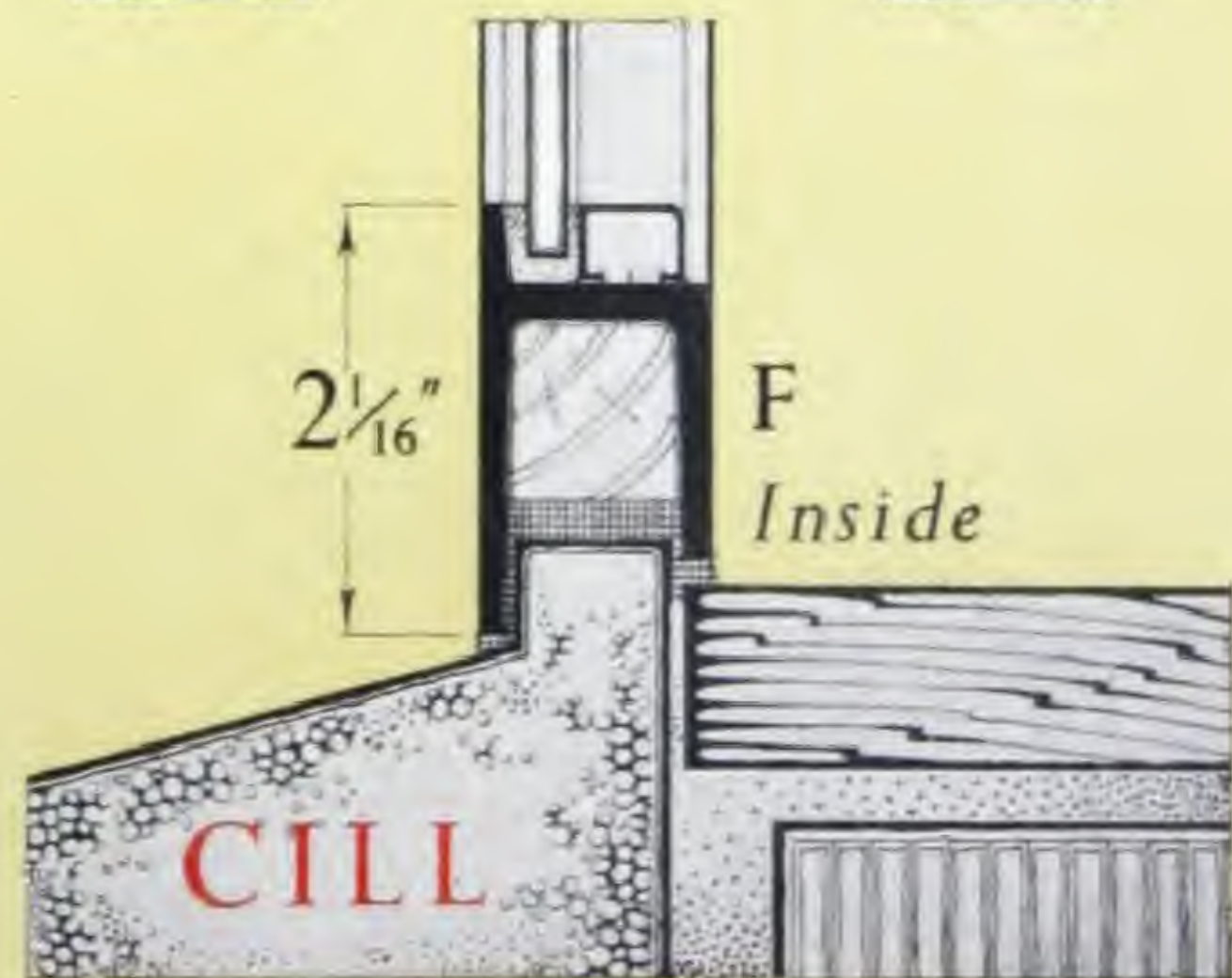
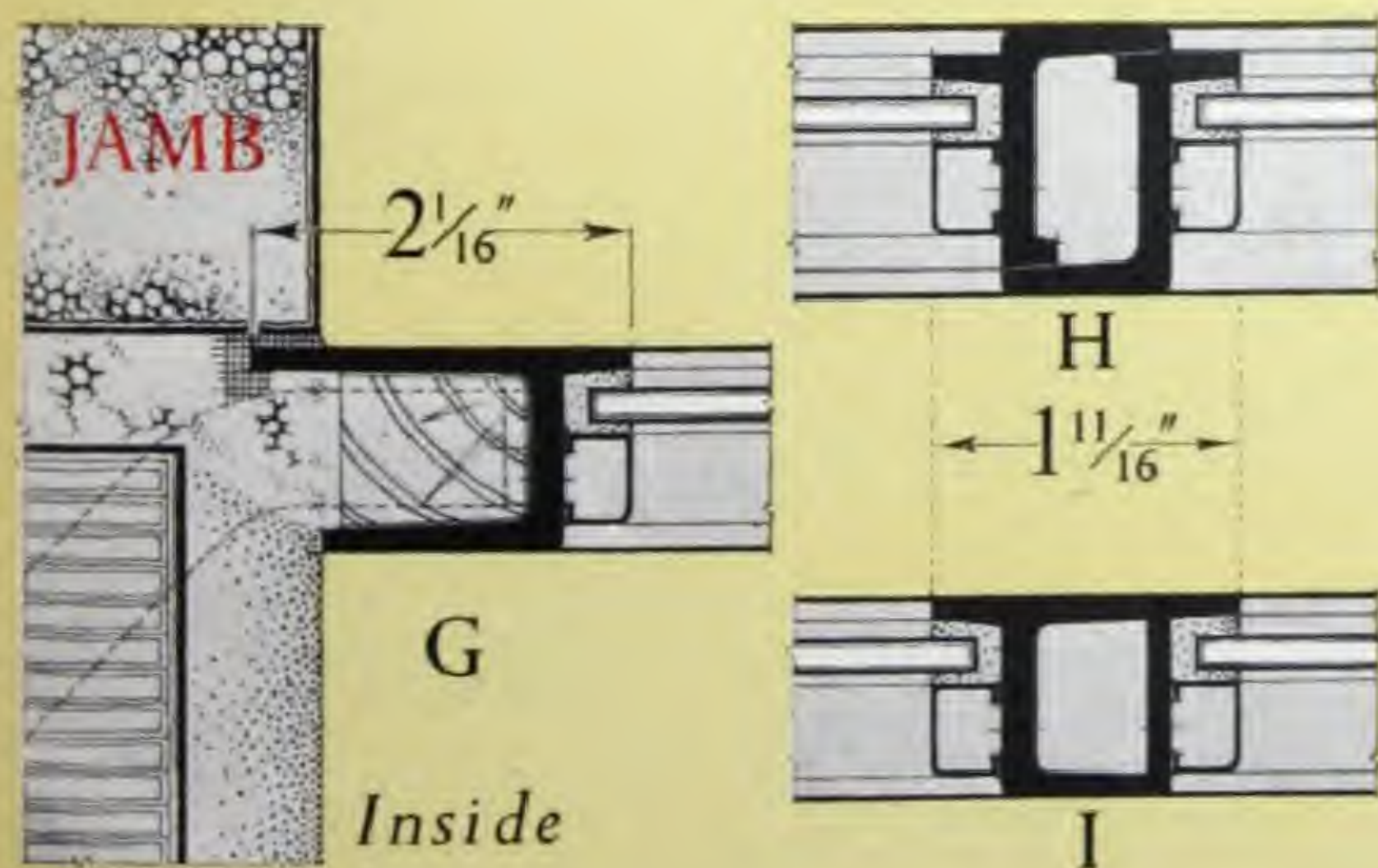
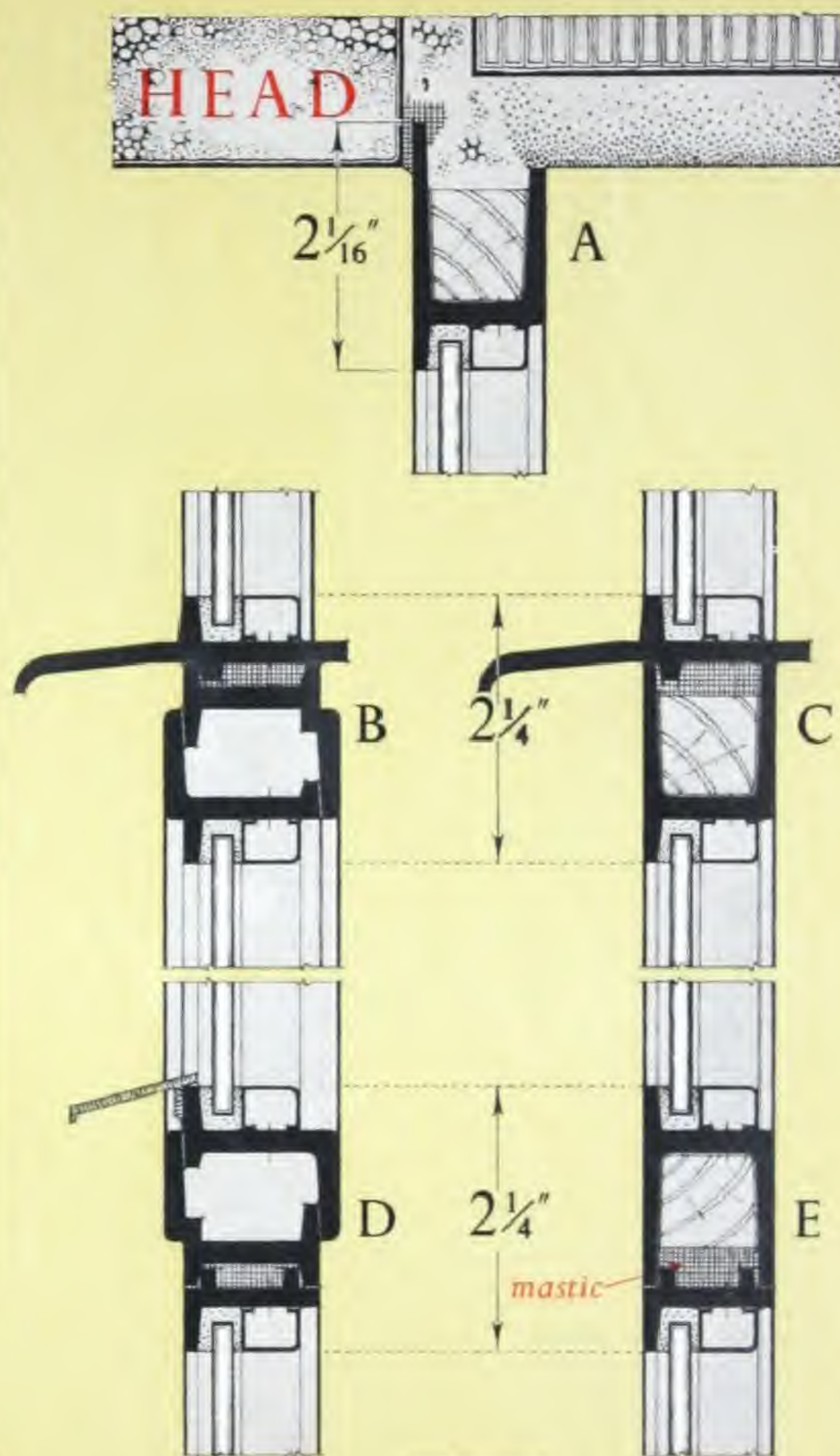
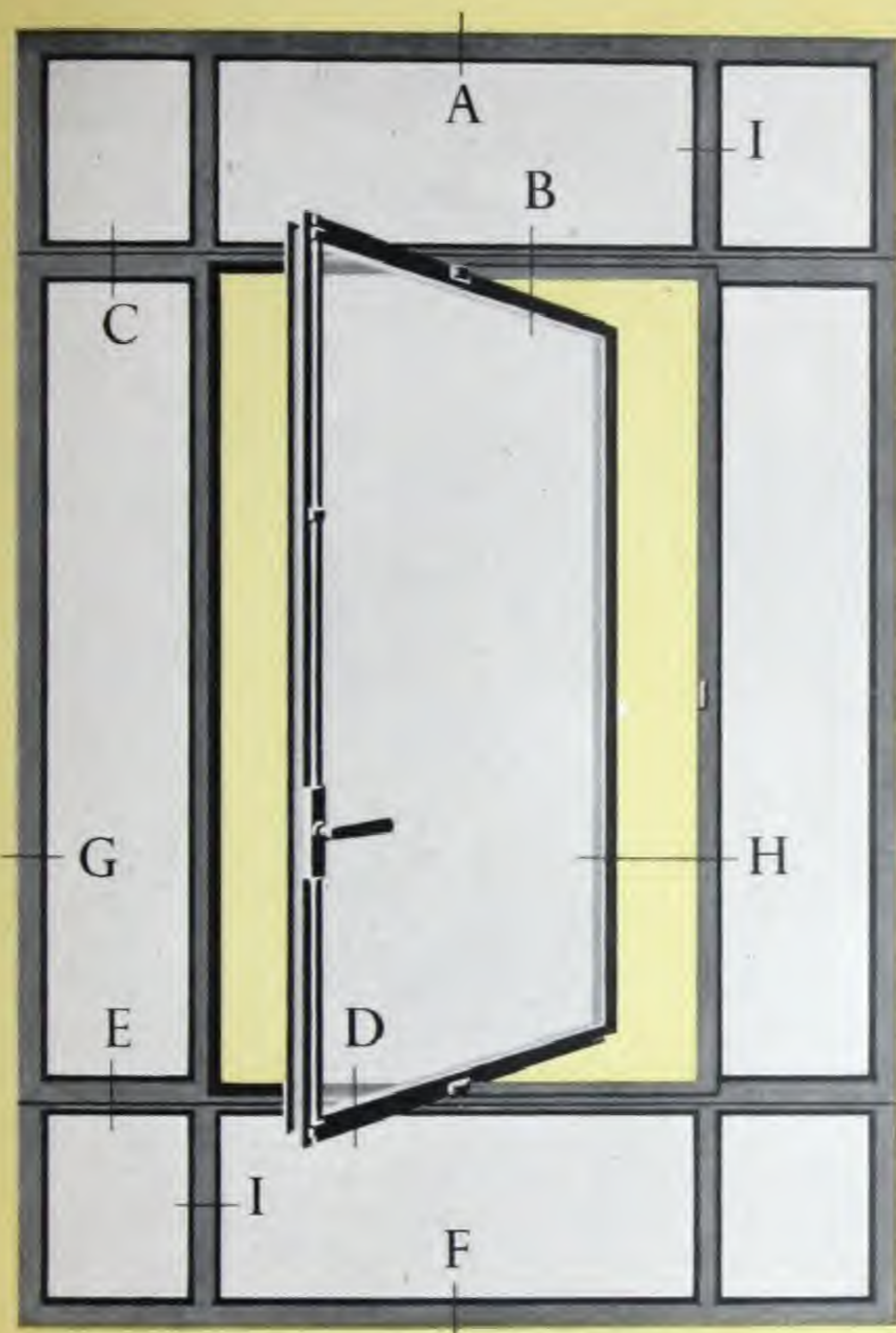


The joints must be filled with mastic, which we supply

HOPE'S SECTIONS

WELDS & COUPLINGS · *Half Full Size*

Where coupling members are undesirable, composite windows of moderate size can be made on a plan which consists partly of butt welding and partly by means of special profiles screwed together. A typical example is illustrated on this page.

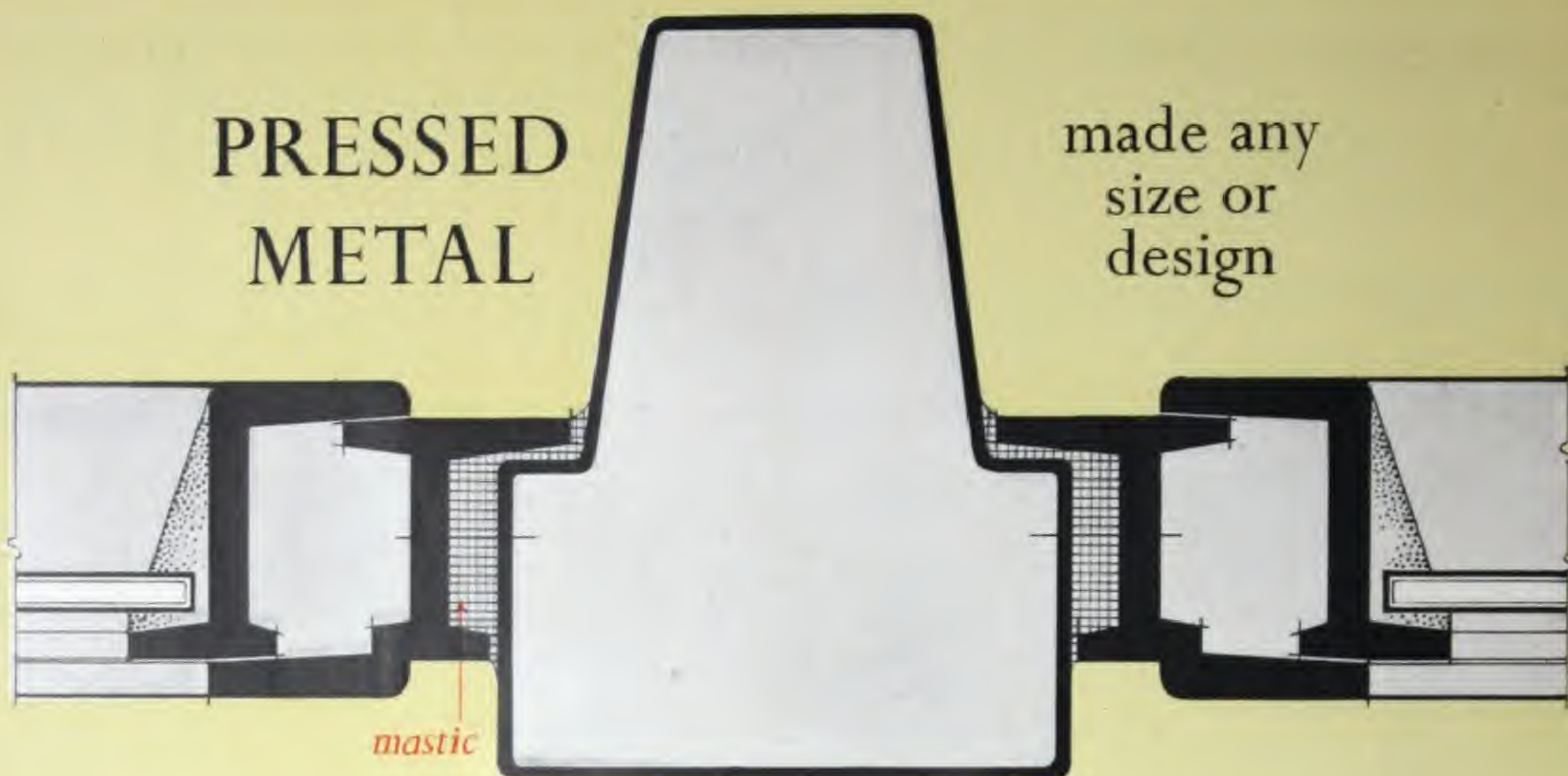


HOPE'S SECTIONS

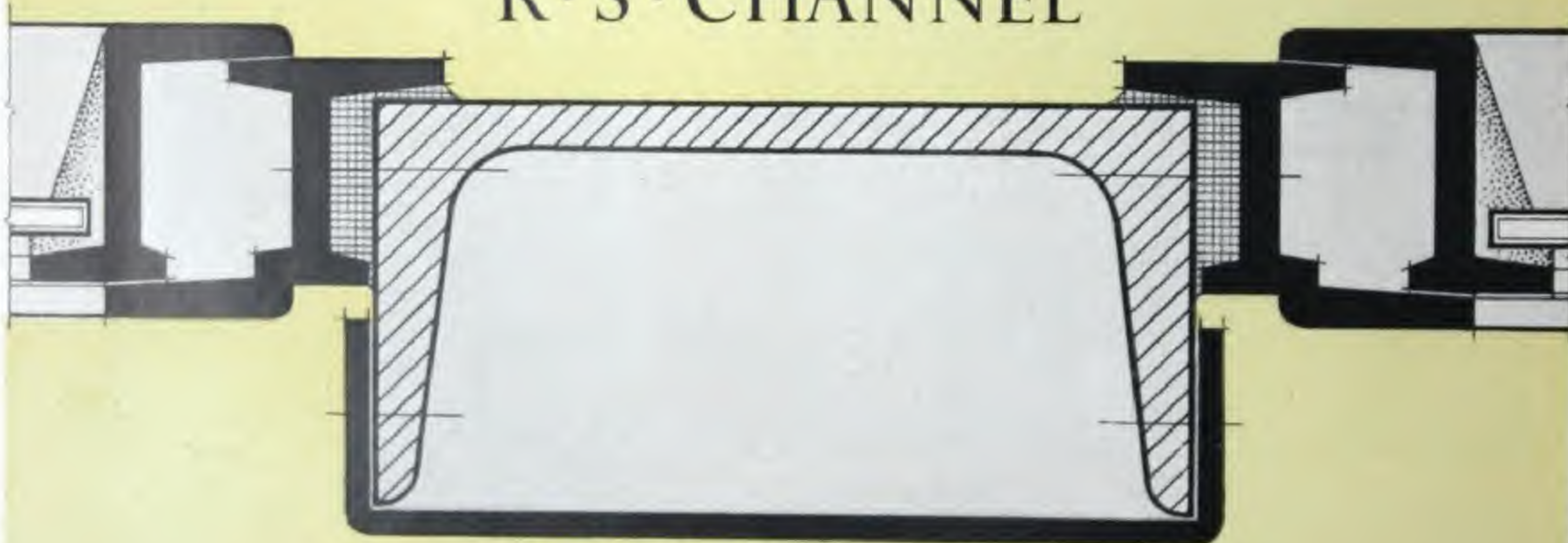
MULLIONS · *Full Size Details*

PRESSED
METAL

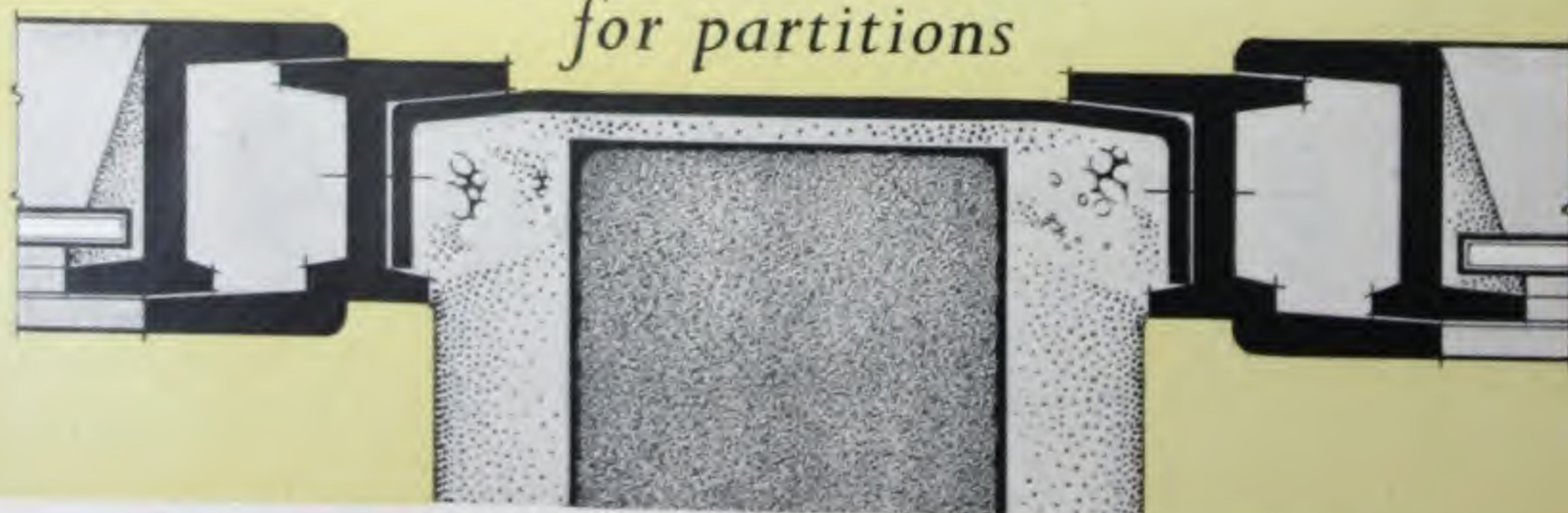
made any
size or
design



R · S · CHANNEL

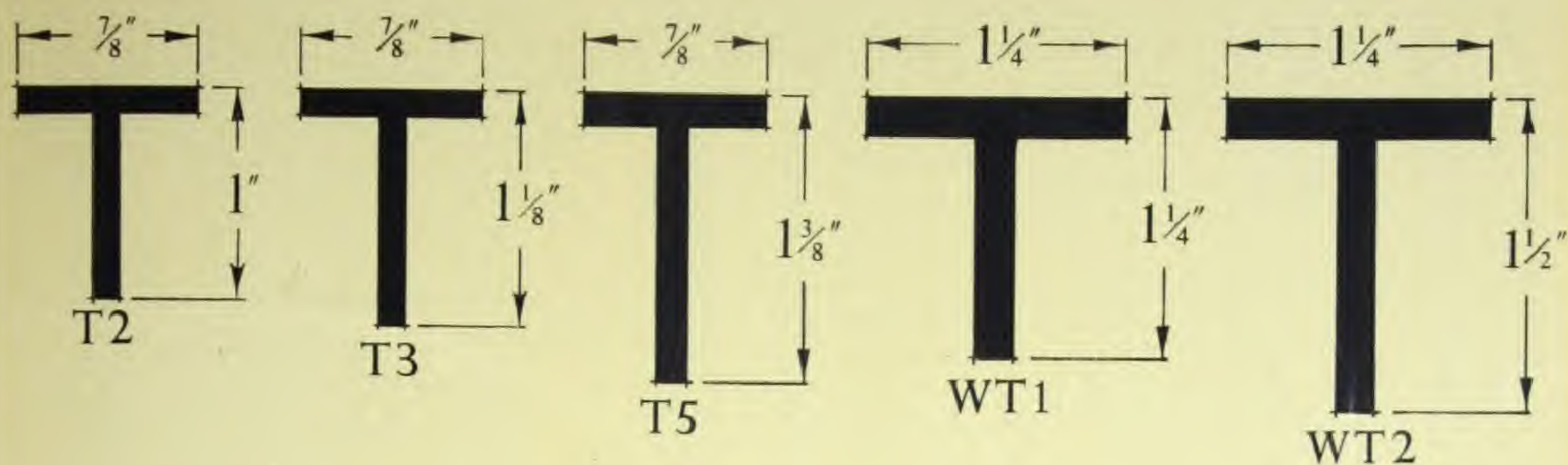


STEEL PLATE
for partitions



HOPE'S SECTIONS

GLAZING BARS • *Full Size*



This large window in our London Showrooms is constructed with pressed steel frame and mullions and $1\frac{1}{4}"$ tee glazing bars

HOPE'S CASEMENTS

OPENING OUTWARDS

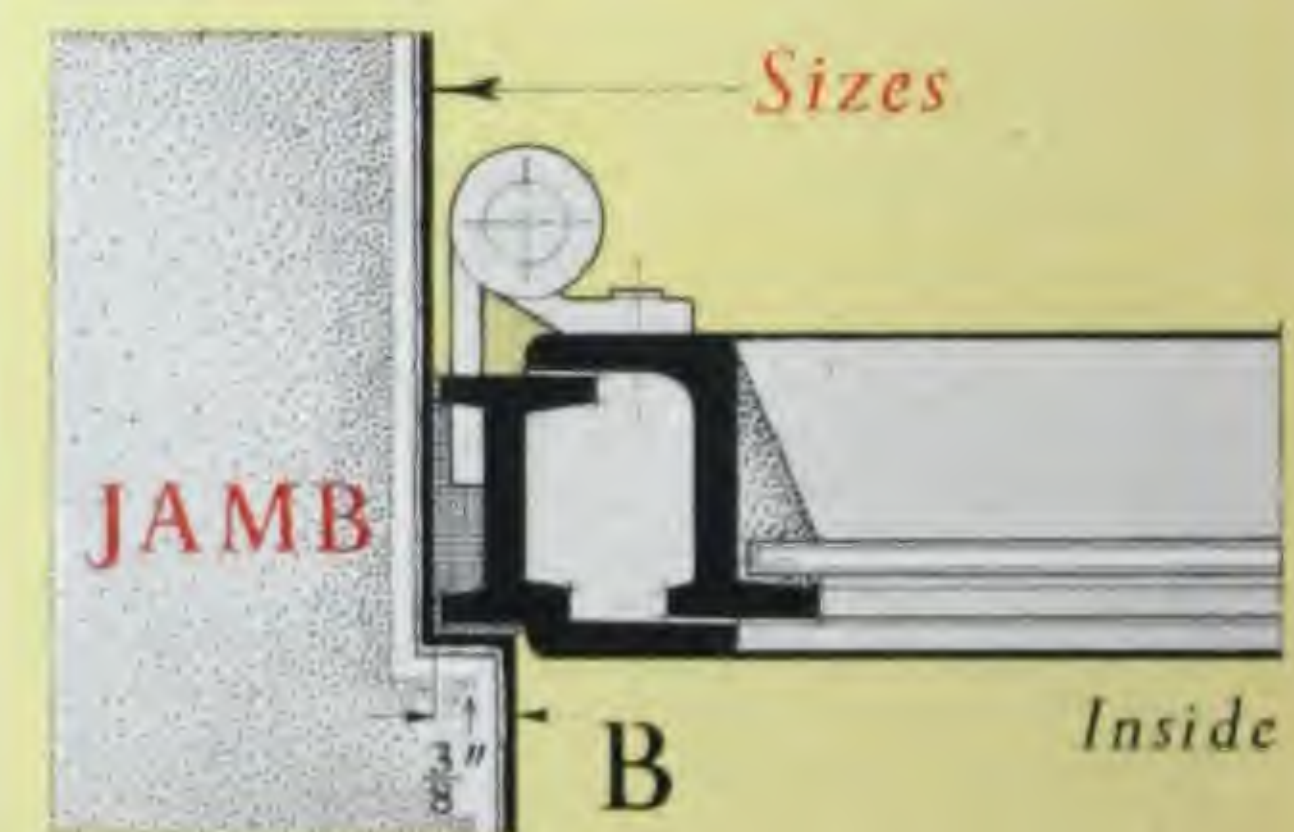
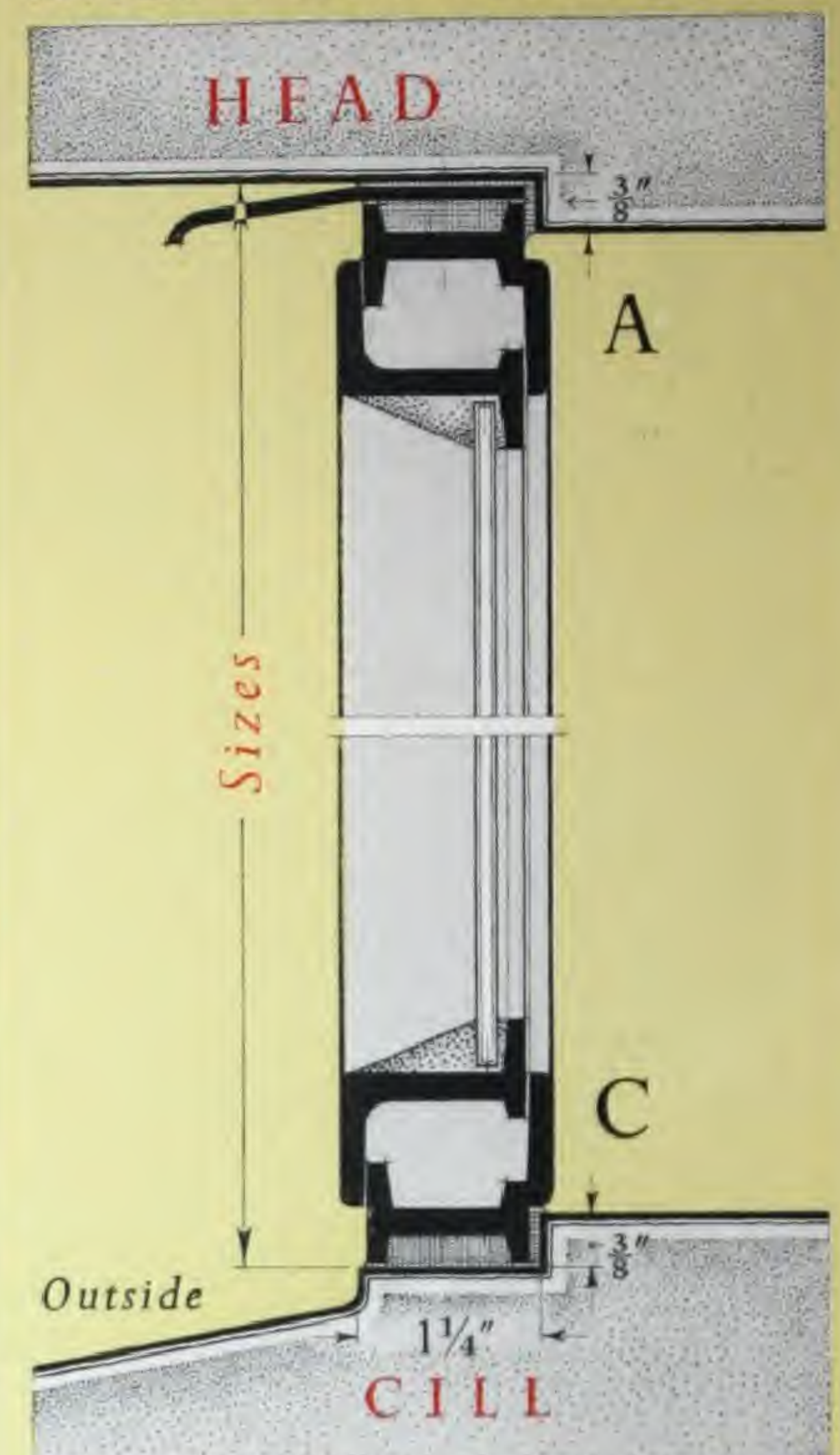


Side-hung casement opening outwards of medium section glazed from the outside. Fitted with bronze handle and stay. Casements over 5 ft. high \times 1 ft. 8 in. wide may be fitted with double grip bolt according to height of cill, so as to bring handle within reach.

Inside glazing with screwless beads is recommended for large panes.

Sizes should be given into rebates as shown on details, clearance is allowed in manufacture. Transom casements are on pages 20 & 21.

HALF FULL SIZE Details



EQUAL FLANGE FRAME
for REBATED WORK
For Masonry Details
see pages 38 to 45.

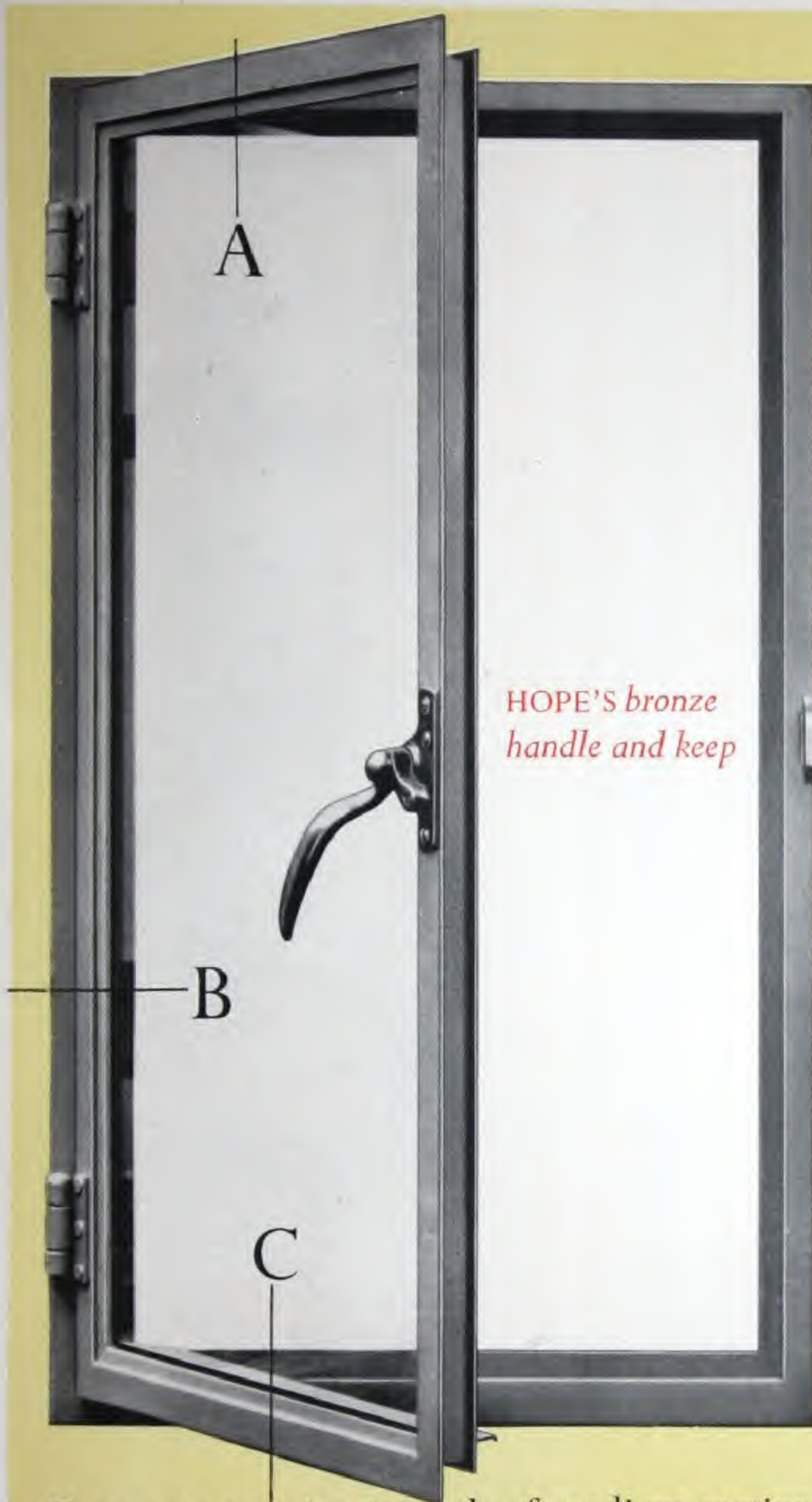
MAXIMUM SIZES

Medium Section only

Height	Width	Perimeter
6' 6"	2' 6"	17' 0"

HOPE'S CASEMENTS

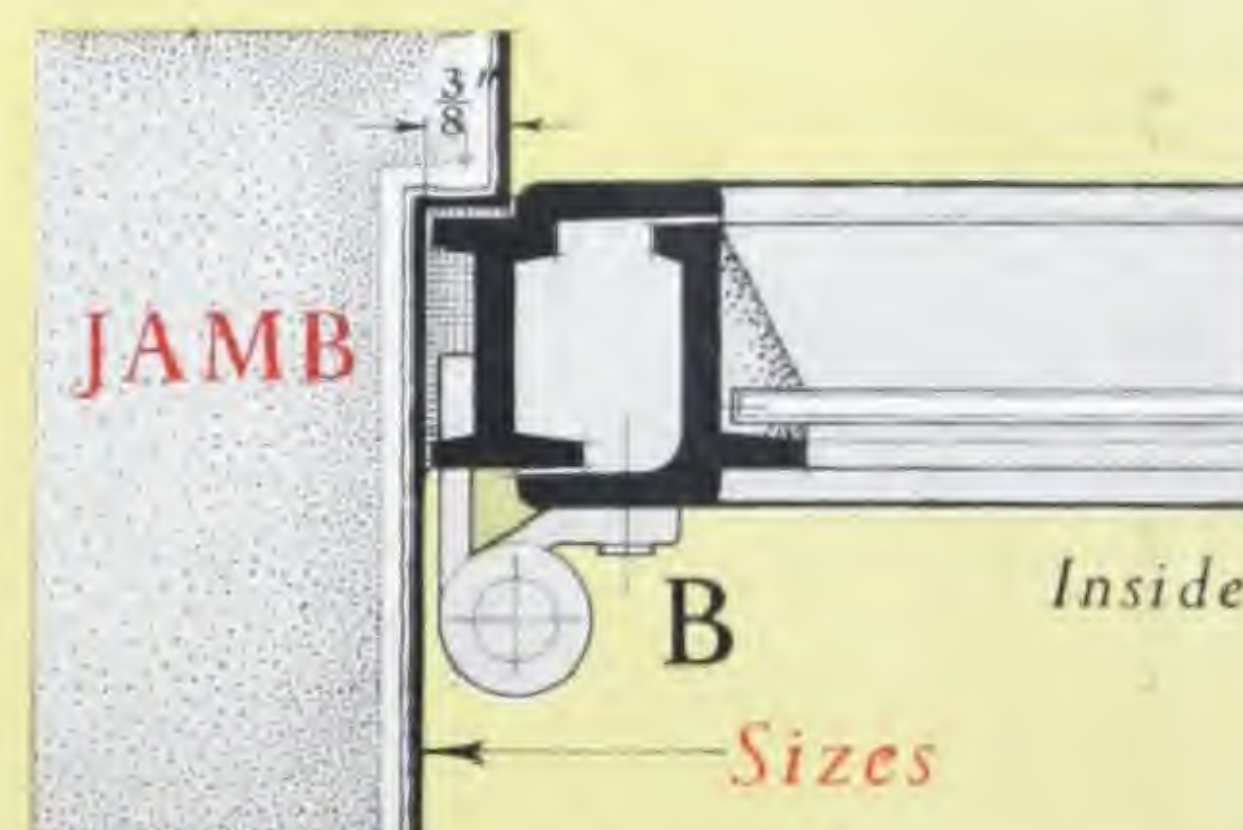
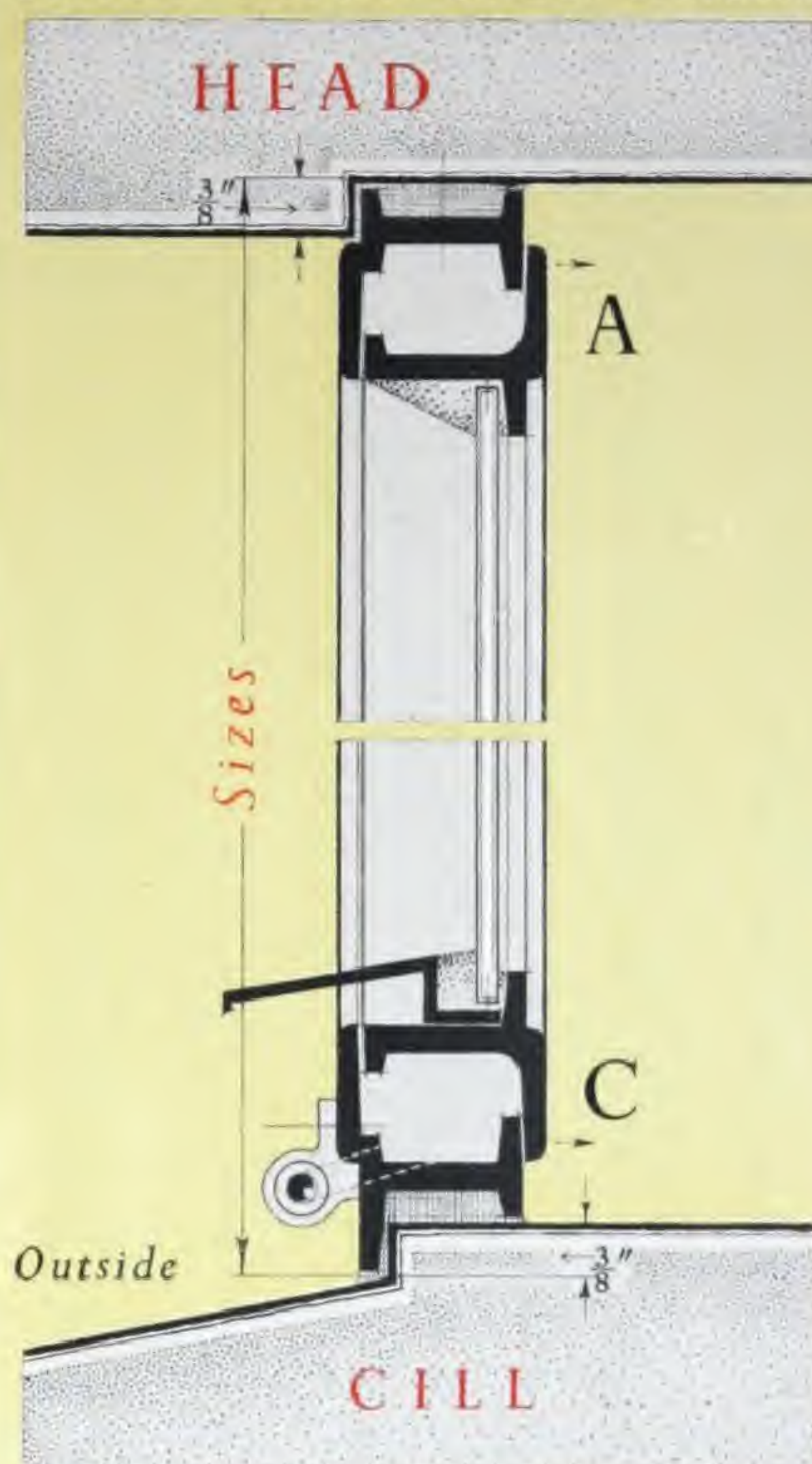
OPENING INWARDS



HOPE'S bronze
handle and keep

Casement opening inwards of medium section glazed from the outside, fitted with bronze handle. No stay is supplied with inward opening casements. Those over 5 ft. high \times 1 ft. 8 in. wide are fitted with double grip bolt, according to height of cill, so as to bring handle within reach. Inside glazing with screwless beads is recommended for large panes.

HALF FULL SIZE Details



EQUAL FLANGE FRAME
for REBATED WORK
For Masonry Details
see pages 38 to 45.

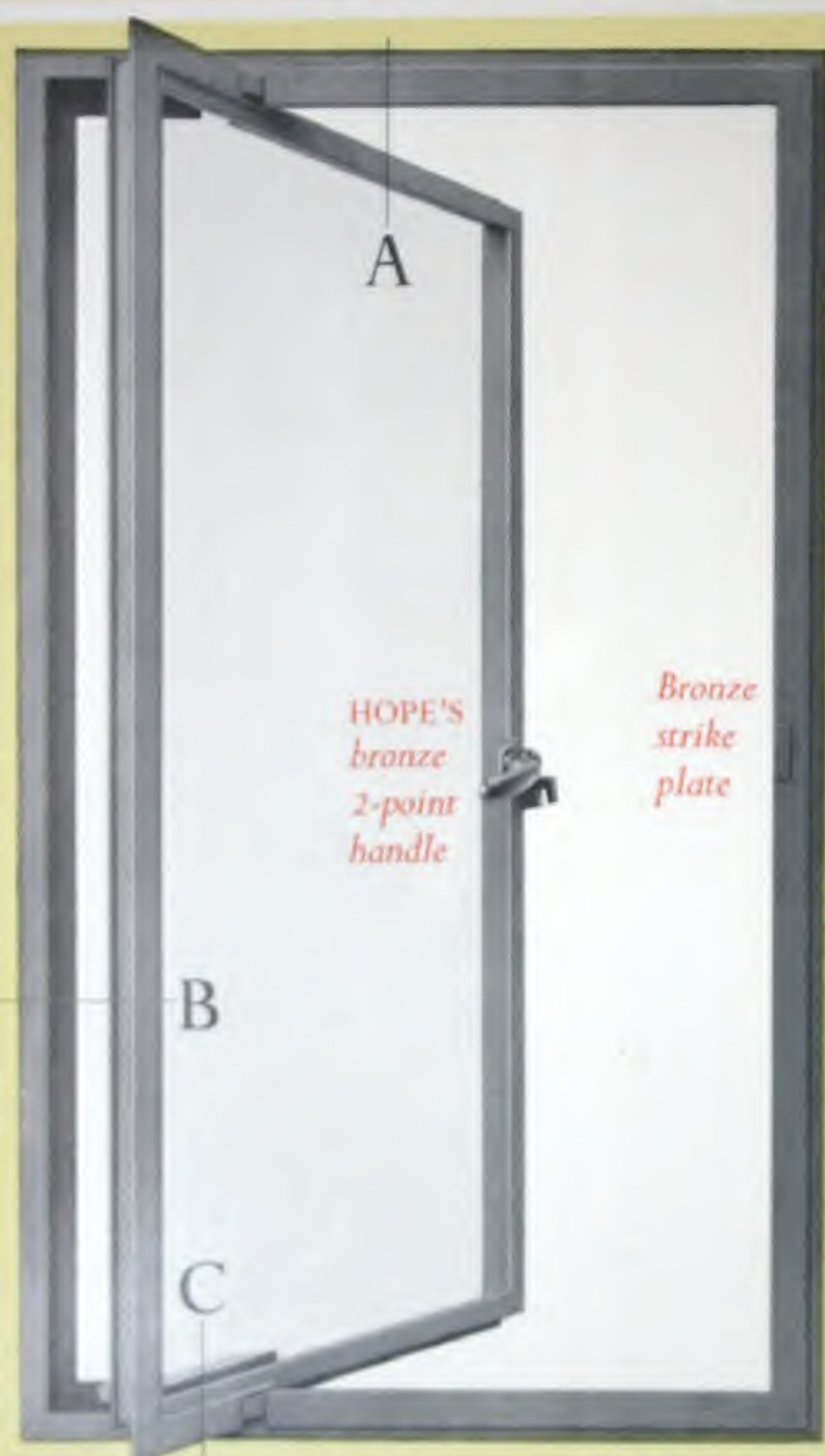
MAXIMUM SIZES

Medium Section only

Height	Width	Perimeter
6' 6"	2' 6"	17' 0"

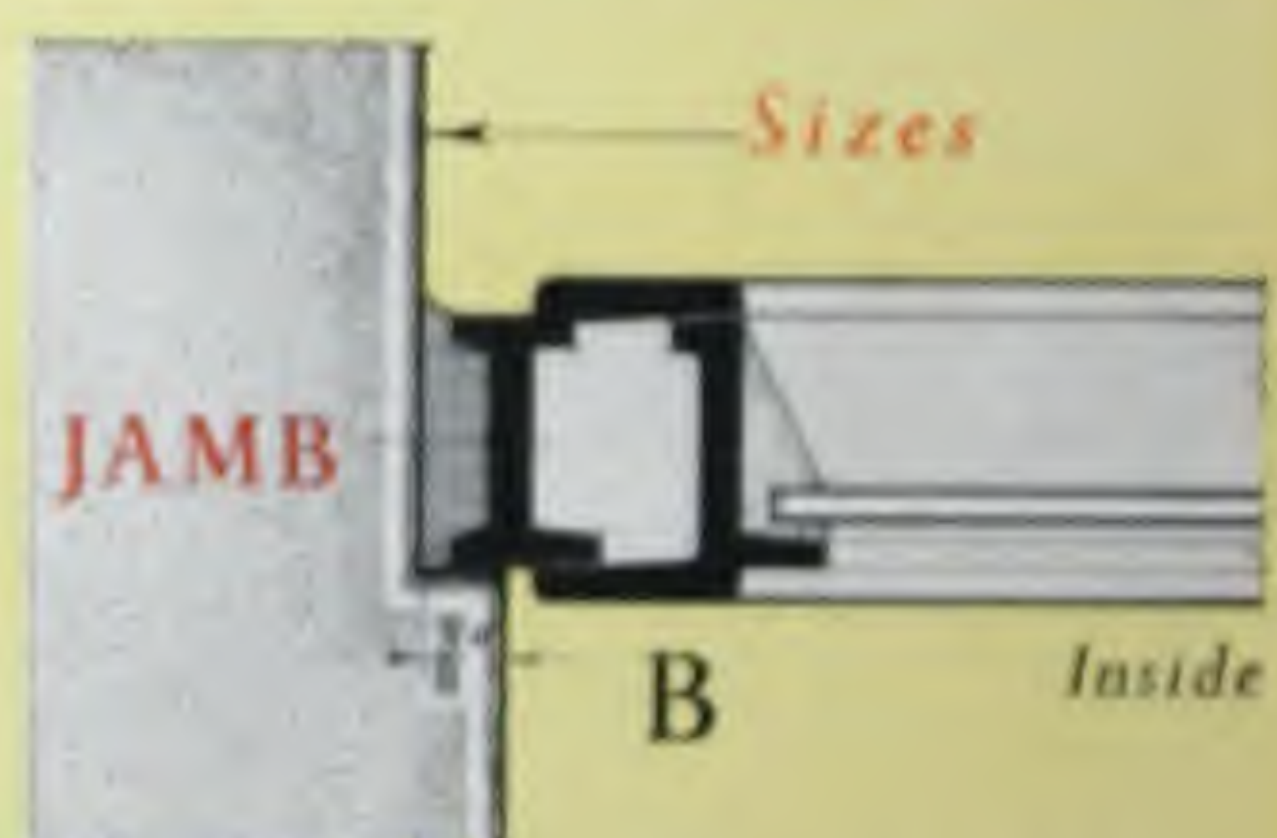
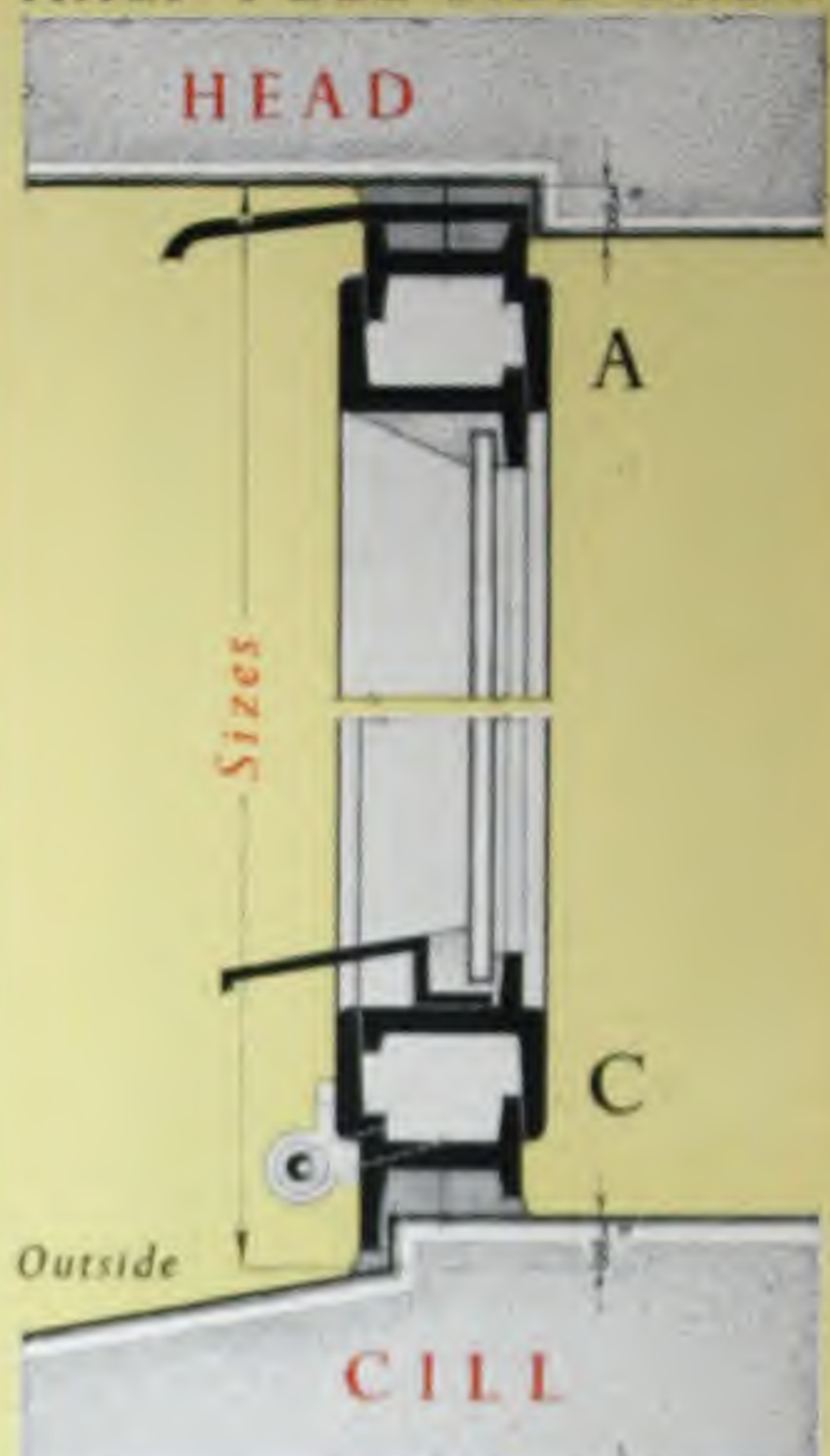
HOPE'S CASEMENTS

VERTICALLY PIVOTED



Pivoted Casement, Medium Section, with HOPE'S taper friction pivots which never seize, and hold safely at any angle. Usual practice is to pivot about 8 in. from one side and this may be followed up to 2 ft. 9 in. wide. Over 2 ft. 9 in. wide we recommend central pivoting. Casements over 5 ft. high may be fitted either with a double grip bolt on the outward opening portion or with a cremone bolt on the inward opening portion. For casements over 2 ft. 9 in. wide we advise the cremone bolt.

HALF FULL SIZE Details



EQUAL FLANGE FRAME
for REBATED WORK
*For Masonry Details
see pages 38 to 45.*

MAXIMUM SIZES

Section	Height	Width	Perimeter
Medium	6' 6"	3' 6"	19' 0"
Heavy	8' 6"	4' 6"	25' 0"

HOPE'S CASEMENTS

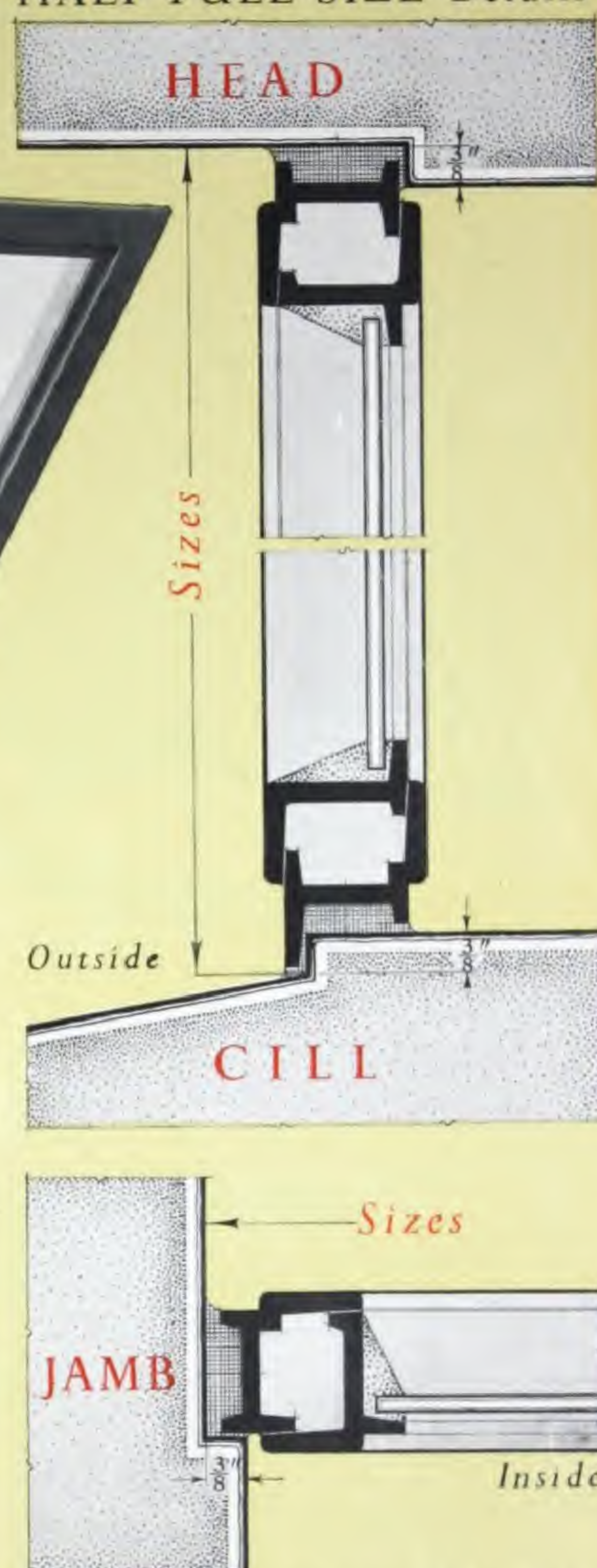
HORIZONTALLY PIVOTED



Horizontally pivoted casement hung on our bronze cup pivots and fitted with double acting bronze spring catch for pole or cord operation. A cam opener may be fitted as illustrated on page 20.

Special large cup pivots can be provided to enable the casement to be turned right over for cleaning.

HALF FULL SIZE Details



EQUAL FLANGE FRAME
for REBATED WORK
For Masonry Details
see pages 38 to 45.

MAXIMUM SIZES

Section	Height	Width	Perimeter
Medium	5' 0"	4' 6"	18' 0"
Heavy	5' 0"	7' 6"	24' 0"

HOPE'S CASEMENTS

OUTWARD OPENING VENTILATORS



TOP HUNG CASEMENT OPENING OUTWARDS

fitted with Hope's bronze cam opener supplied in sizes from 6 inch to 12 inch with notches 3 inches apart. Projection from inside face of frame when closed, $1\frac{3}{4}$ inches. We recommend this fitting for all top hung casements which are within reasonable reach. It can be operated by hand or pole and holds the casement securely when closed. Made to hang down where there is no projecting transom. *Maximum sizes given below.*



PROJECTED TOP HUNG CASEMENT OPENING OUTWARDS

fitted with sliding side arms which hold the casement at any angle and allow it to be opened to a horizontal position for cleaning. Fitted with special bronze handle for hand or pole operation. It will be noted that no part of the casement projects into the room to interfere with blinds.

MAXIMUM SIZES

Section	Height	Width	Perimeter
Medium	5' 0"	5' 0"	17' 0"

HOPE'S CASEMENTS

INWARD OPENING VENTILATORS



BOTTOM HUNG CASEMENT OPENING INWARDS

fitted with sherardized steel concealed side arms and double acting bronze spring catch for cord or pole operation. The casement is hung on bronze cup pivots. The side arms are movable to allow the casement to be lowered for cleaning from the inside. *Maximum sizes given below.*



HOPPER CASEMENT OPENING INWARDS

with side cheeks either of sheet steel or prepared to receive glass, fitted with double acting bronze spring catch for cord or pole operation. We also make hoppers with sheet steel cheeks attached to the casement to project outside when closed.

MAXIMUM SIZES

Section	Height	Width	Perimeter
Medium	5' 0"	5' 0"	17' 0"

HOPE'S CASEMENTS

FRENCH · TO OPEN OUT

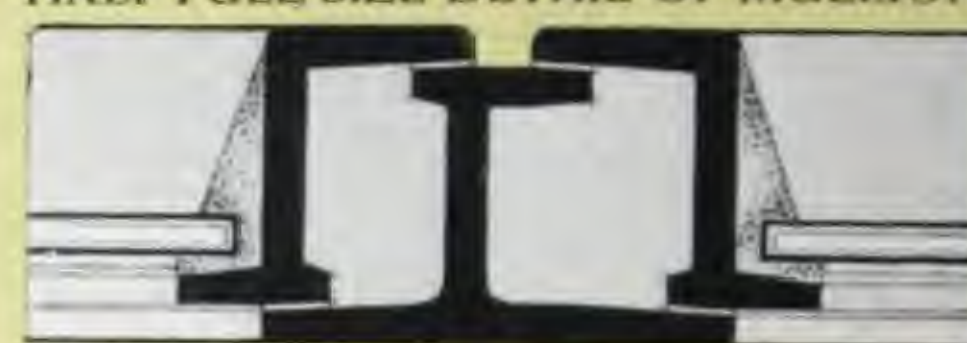
WITH MULLION



French casement opening outwards of Medium Section glazed from outside fitted with bronze handles and stays. Casements over 5 ft. high \times 1 ft. 8 in. wide may be fitted with double grip bolt according to height of cill so as to bring handle within reach.

Inside glazing with screwless bead is recommended for large panes.

HALF FULL SIZE DETAIL OF MULLION



MAXIMUM SIZES

	<i>Medium</i>	<i>Heavy</i>
<i>Height</i>	6' 0"	8' 0"
<i>Width</i>	5' 0"	6' 0"

WITHOUT MULLION



French casement opening outwards, without mullion, of Medium Section glazed from outside.

Fitted with bronze handle and stays, and bronze bolts on left-hand casement.

Casements over 5 ft. high fitted with double grip or cremone bolt.

Inside glazing with screwless bead is recommended for large panes.

MEETING BARS: HALF FULL SIZE



MAXIMUM SIZES

	<i>Medium</i>	<i>Heavy</i>
<i>Height</i>	6' 0"	8' 0"
<i>Width</i>	4' 6"	5' 0"

HOPE'S CASEMENTS

FRENCH · TO OPEN IN

WITH MULLION



French casement opening inwards of Medium Section glazed from outside. Fitted with bronze handles only, no stay being required. Specification otherwise as for opening out casement.

HALF FULL SIZE DETAIL OF MULLION



MAXIMUM SIZES

	<i>Medium</i>	<i>Heavy</i>
<i>Height</i>	6' 0"	8' 0"
<i>Width</i>	5' 0"	6' 0"

WITHOUT MULLION



French casement opening inwards without mullion, of Medium Section glazed from outside. Fitted with cremone bolt and concealed bolts on left-hand casement. No stay required for inward opening casements. Inside glazing with screwless bead is recommended for large panes.

MEETING BARS: HALF FULL SIZE

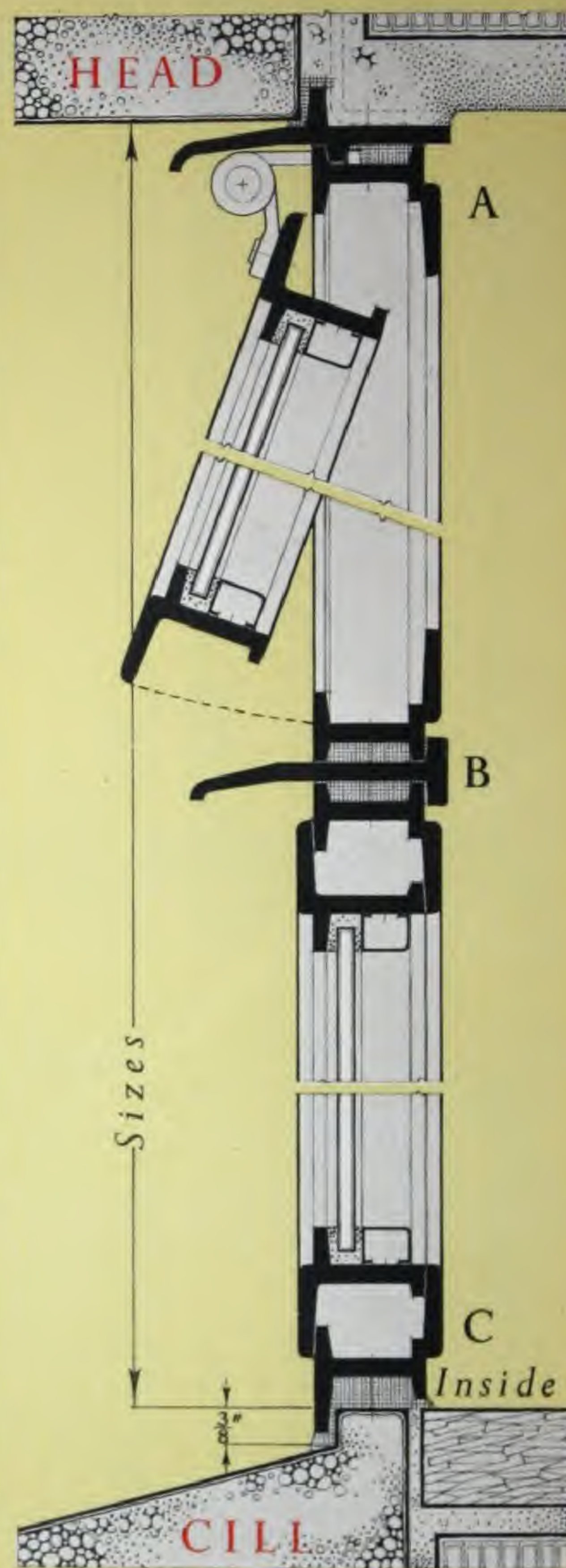
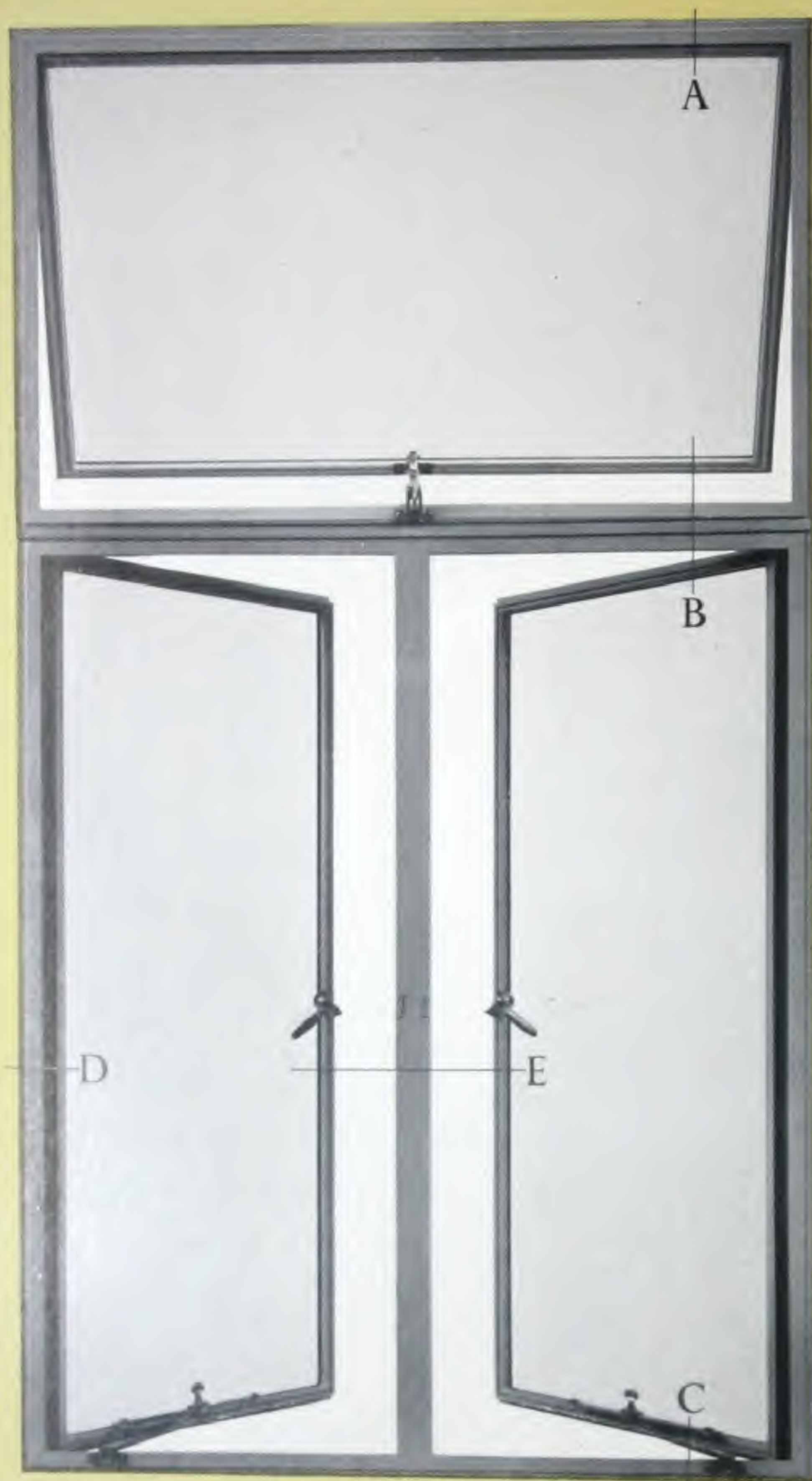


MAXIMUM SIZES

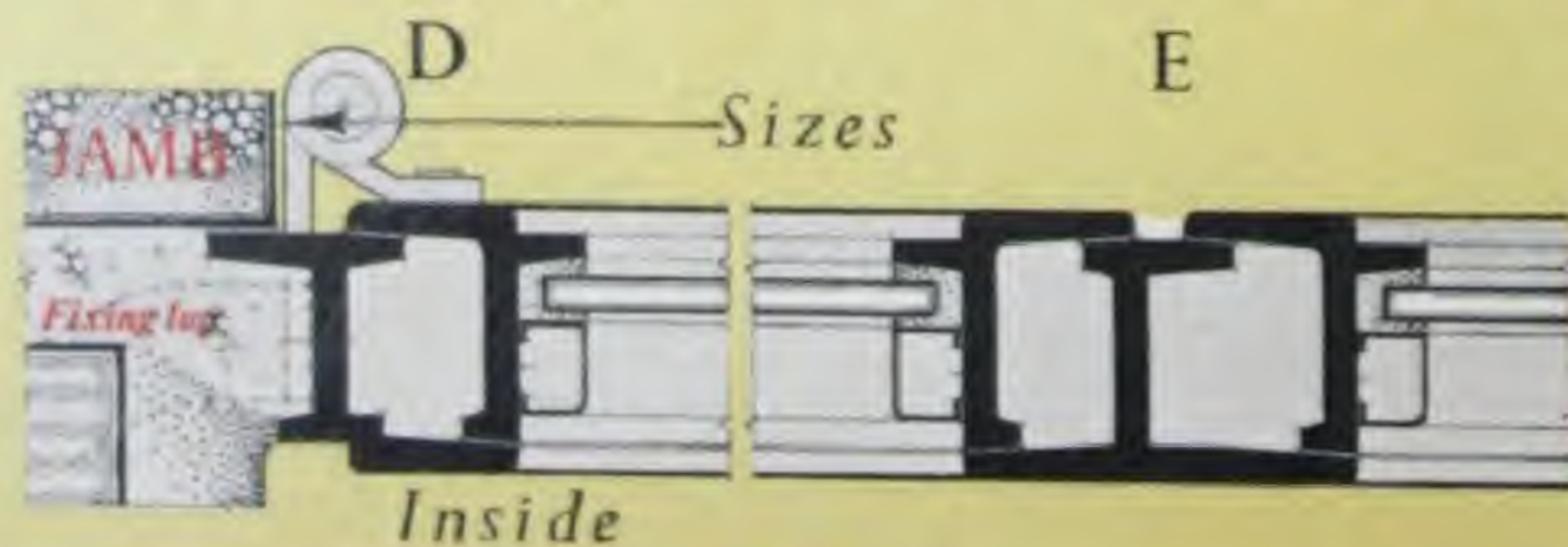
	<i>Medium</i>	<i>Heavy</i>
<i>Height</i>	6' 0"	8' 0"
<i>Width</i>	4' 6"	5' 0"

HOPE'S WINDOWS

COMPOSITE 'Z' TYPE · *Half full size details*



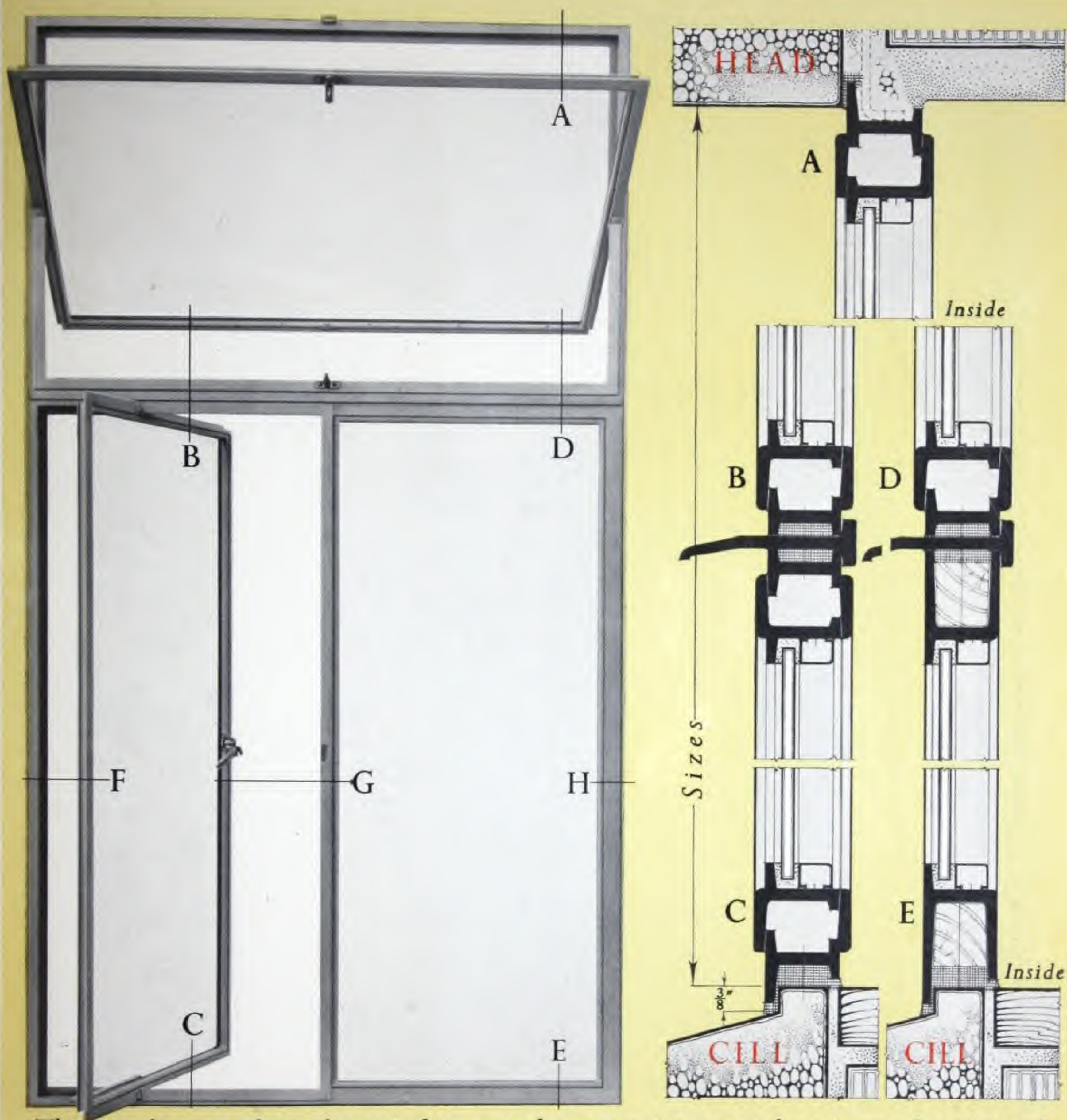
This design of composite window affords a wide range of ventilation and perfect safety for cleaning from inside. The transom casement may be hung at bottom



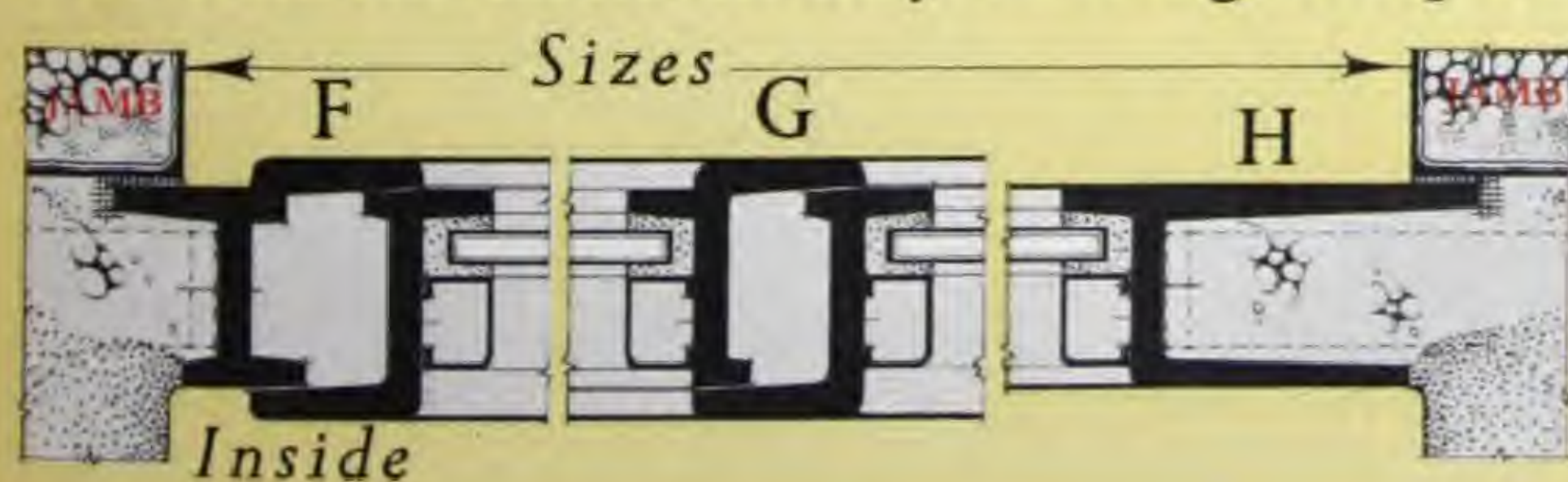
or to swing, and may be fitted with operating gear. We advise the use of sub-frames. See pages 26 and 27.

HOPE'S WINDOWS

COMPOSITE 'Y' TYPE • *Half full size details*



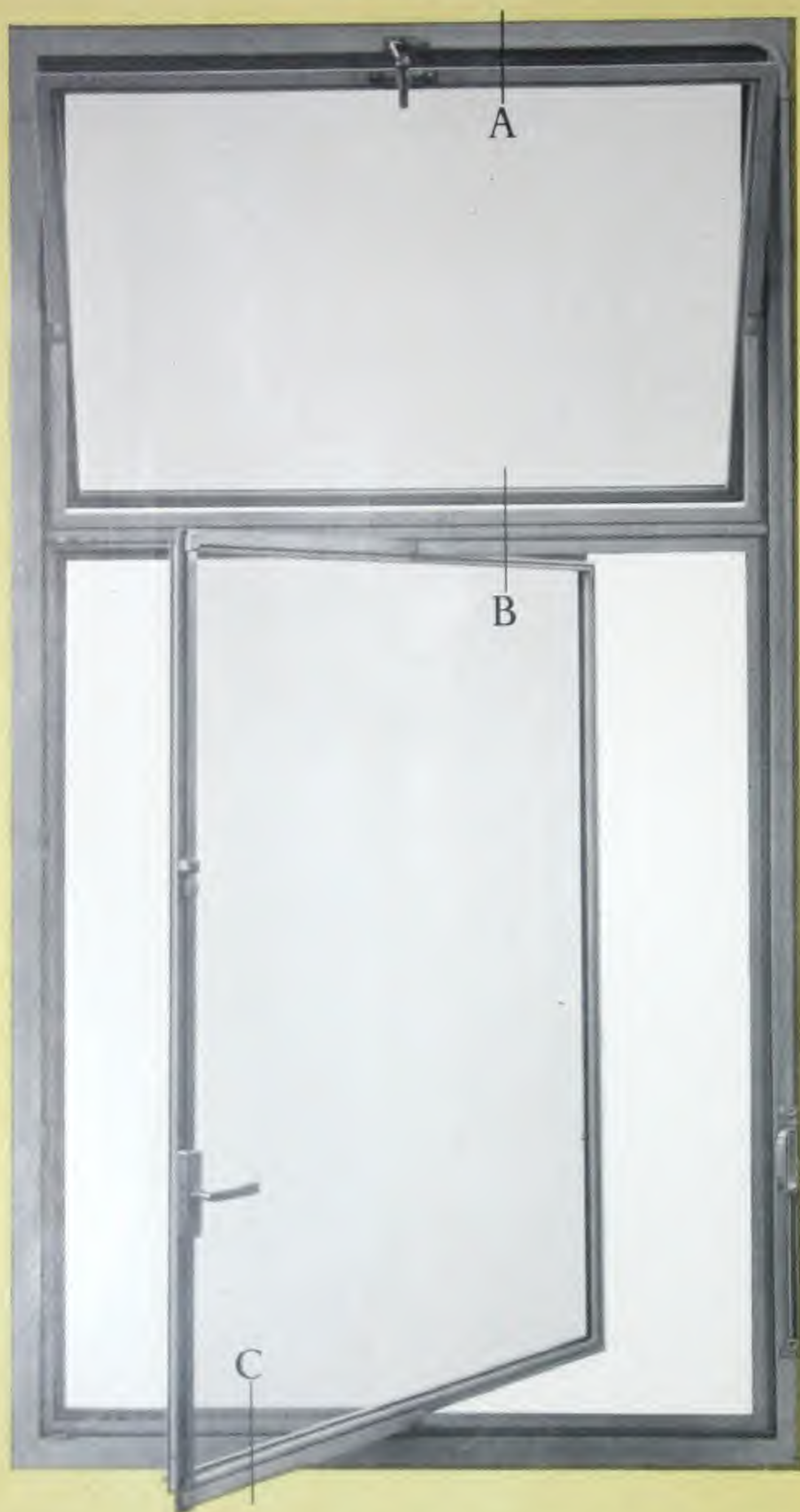
This is cheaper than the window on the opposite page, but it can be cleaned with safety from inside and provides sufficient ventilation in temperate climates. The transom casement may be hung at top or at bottom, and may be fitted with



operating gear. We advise the use of sub-frames. See pages 26, 27, 31, 41 and 45.

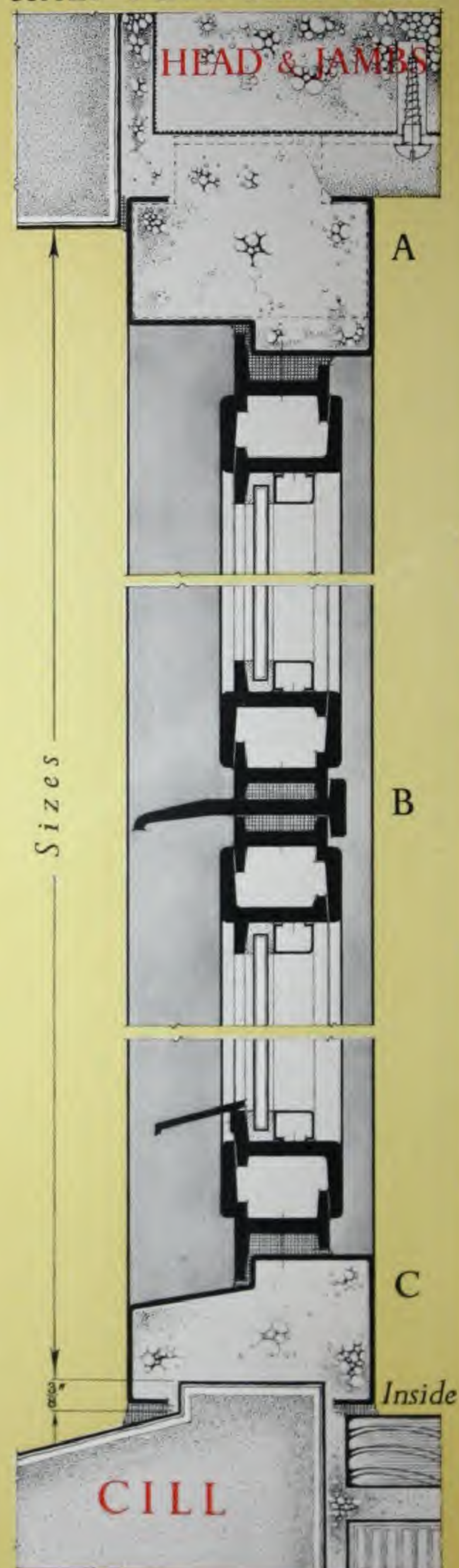
HOPE'S WINDOWS

COMPOSITE 'W' TYPE *in steel sub-frame*



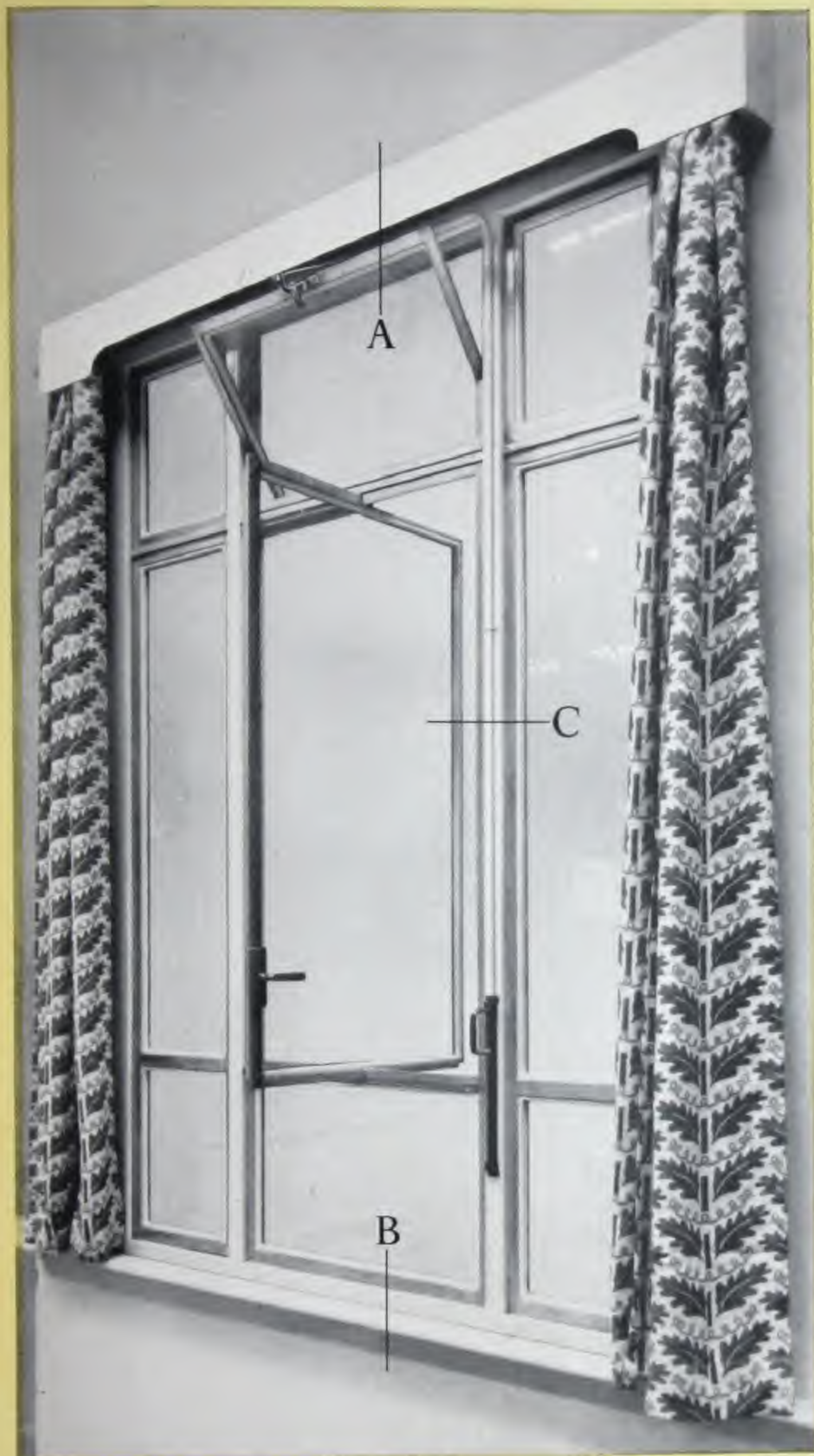
This window meets with approval where 100% ventilation is demanded and easy cleaning from inside. The swing above transom is fitted with Hope's releasable cable gear and the large vertically pivoted casement below with Hope's cremone bolt on the inside half. This arrangement provides easy operation in any weather.

HALF FULL SIZE Details



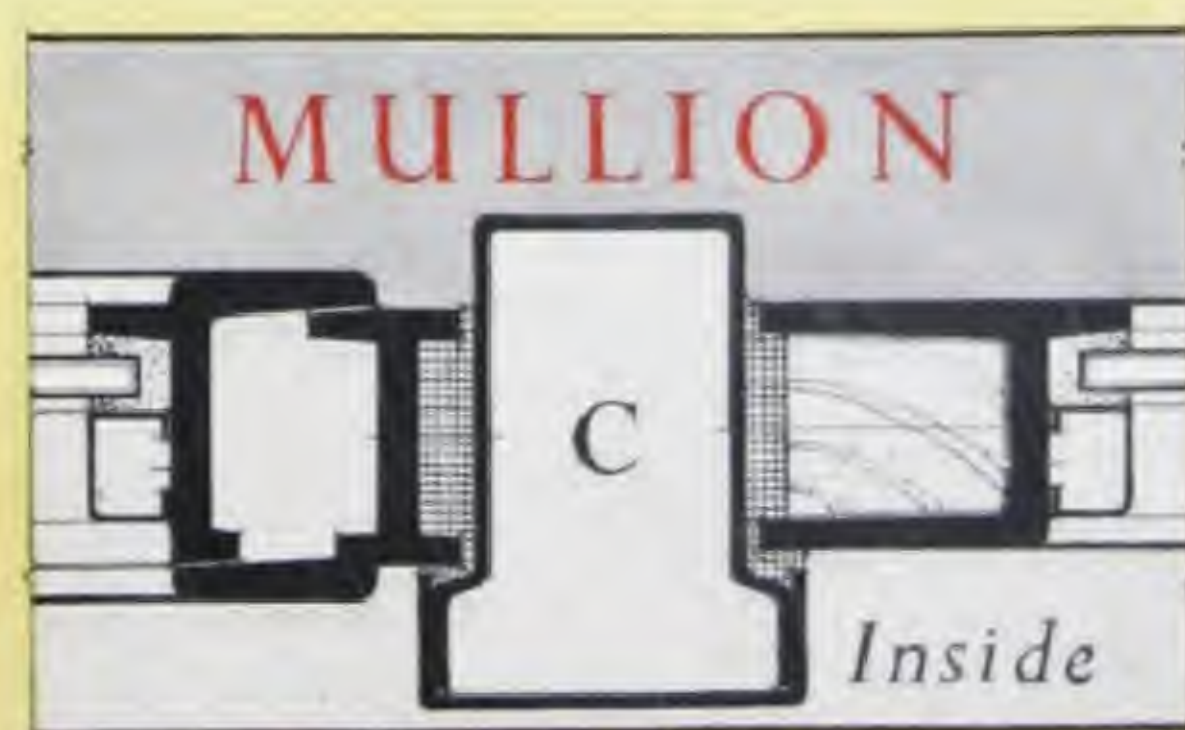
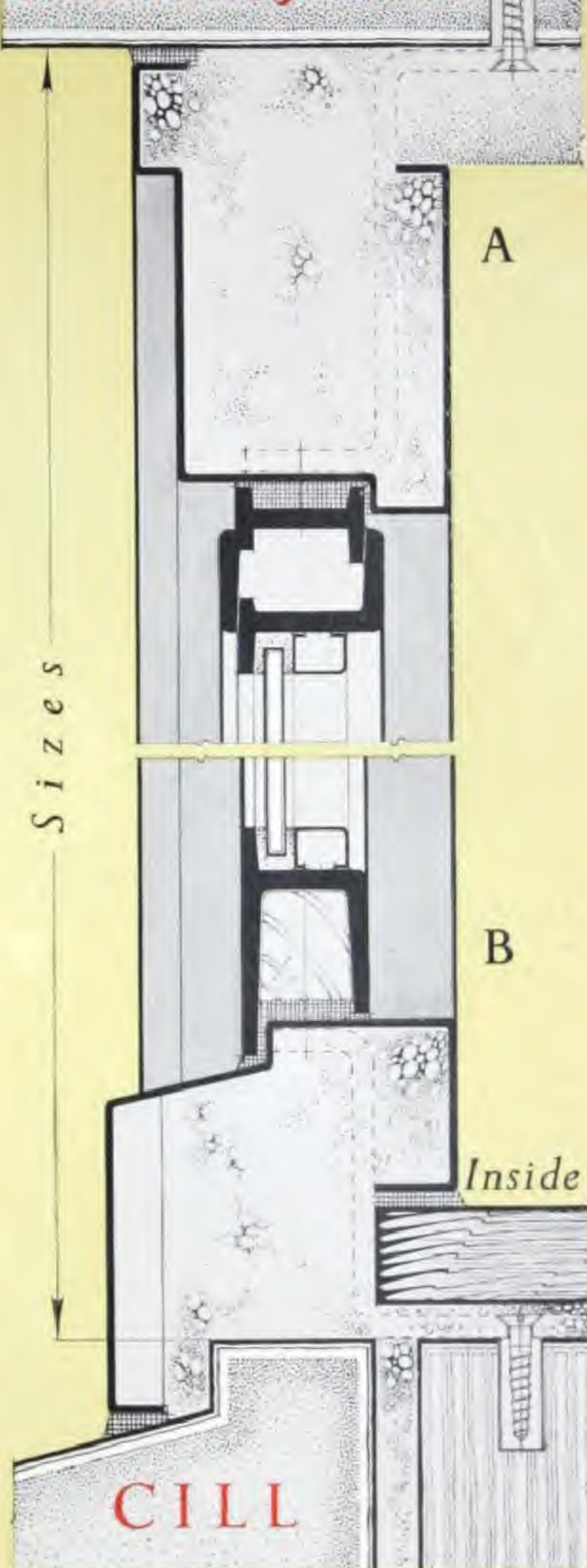
HOPE'S WINDOWS

COMPOSITE 'X' TYPE *in steel sub-frame*



HALF FULL SIZE Details

HEAD & JAMBS



This is one of a remarkable installation at the Adelphi Hotel, Liverpool, where all wood windows were removed and steel windows of the above design substituted. The swing above transom is fitted with Hope's releasable cable gear and the large V.P. is fitted with Hope's cremone bolt on the inside. This arrangement provides easy operation in any weather and safety cleaning of the whole of the window from the inside.

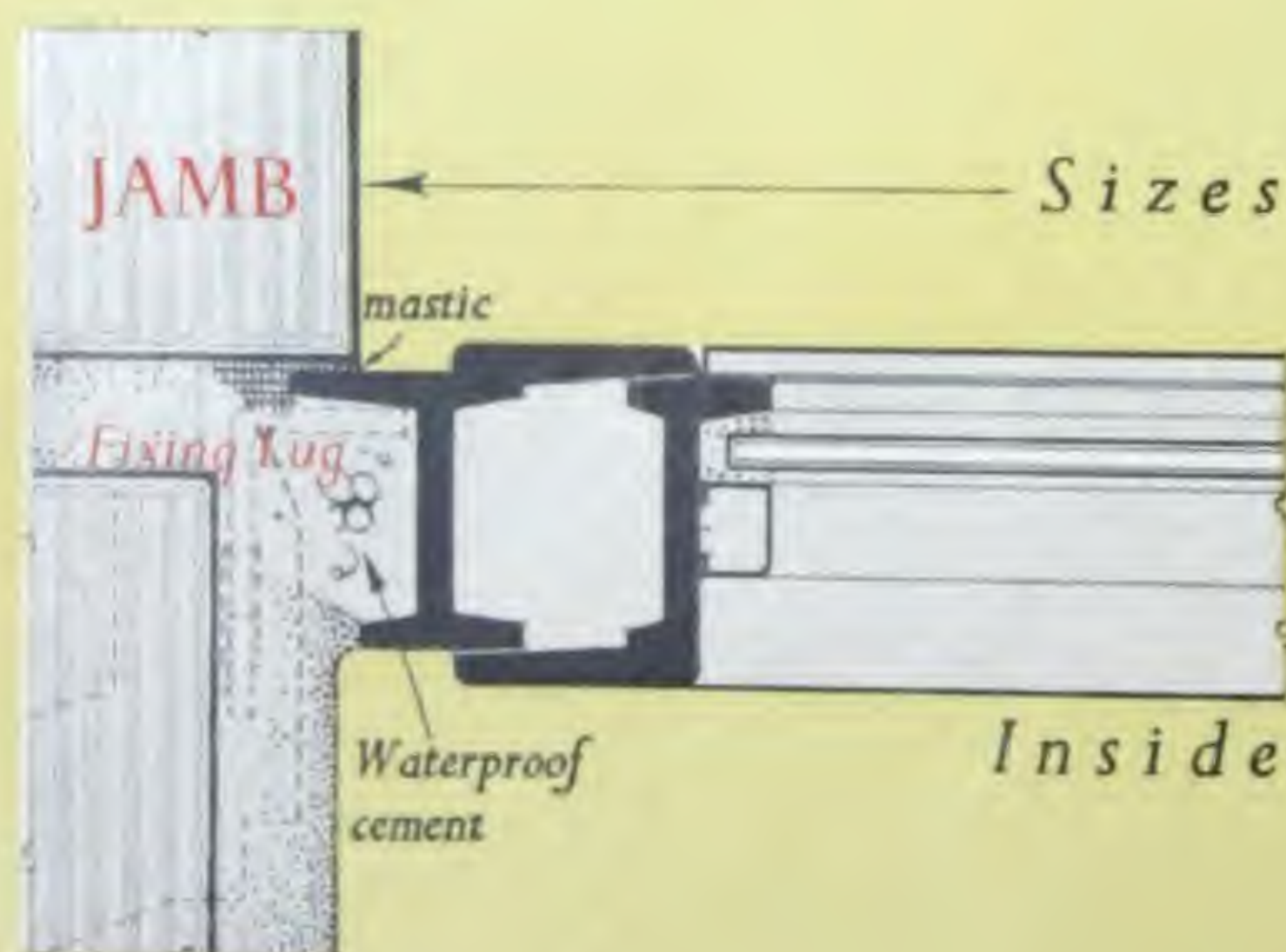
HOPE'S *Austral* WINDOWS

HALF FULL SIZE DETAILS

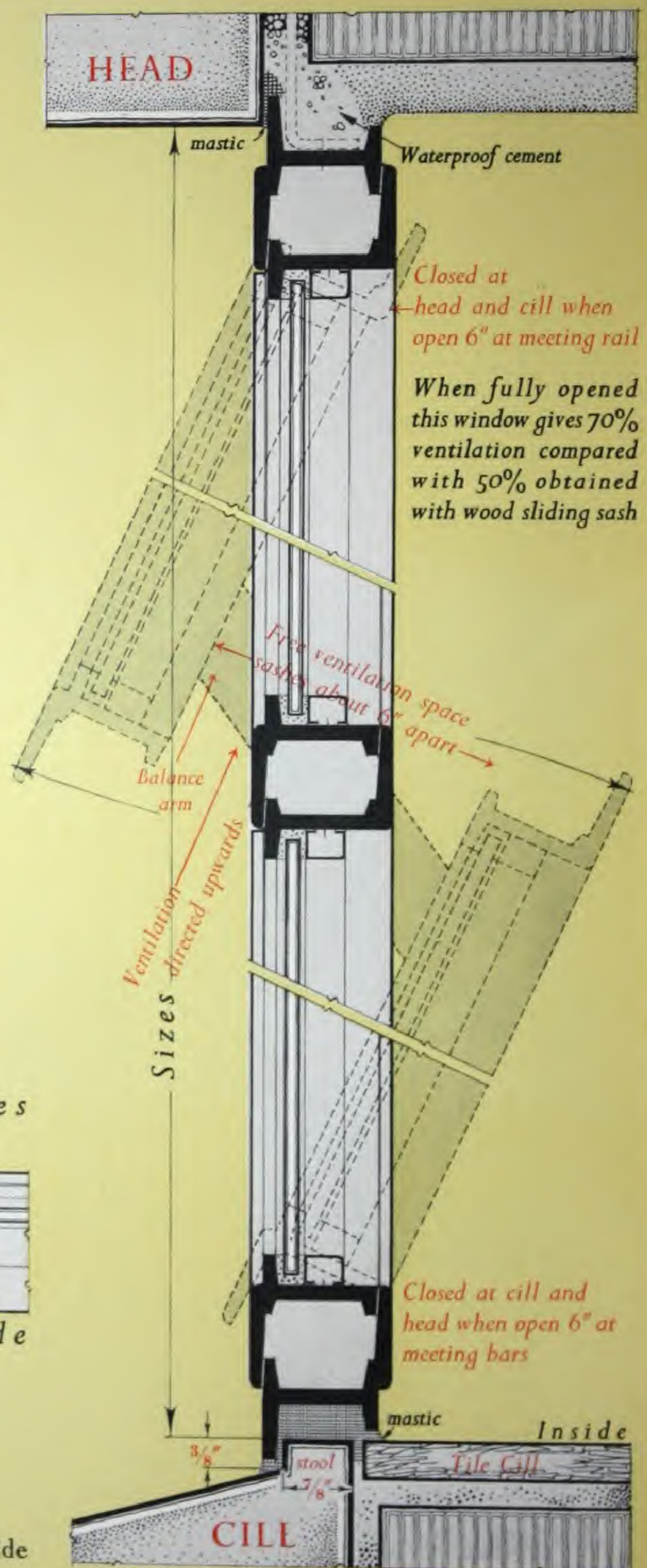
The Austral window has been extensively used in schools and hospitals in Great Britain and the United States for over 20 years.

The upper and lower sashes are balanced on pivoted arms; the arms revolve through a quarter circle and the sashes balance each other in any position.

Blind brackets may be provided at the top of each sash and spring roller blinds set close to the glass. These are held in tension with cords and do not flap in the wind when the sashes are open. This gives protection from hot sun with full ventilation.



MAXIMUM SIZE: 8' 6" high x 4' 6" wide





HOPE'S *Austral* WINDOW

HOPE'S SLIDING & FOLDING WINDOWS

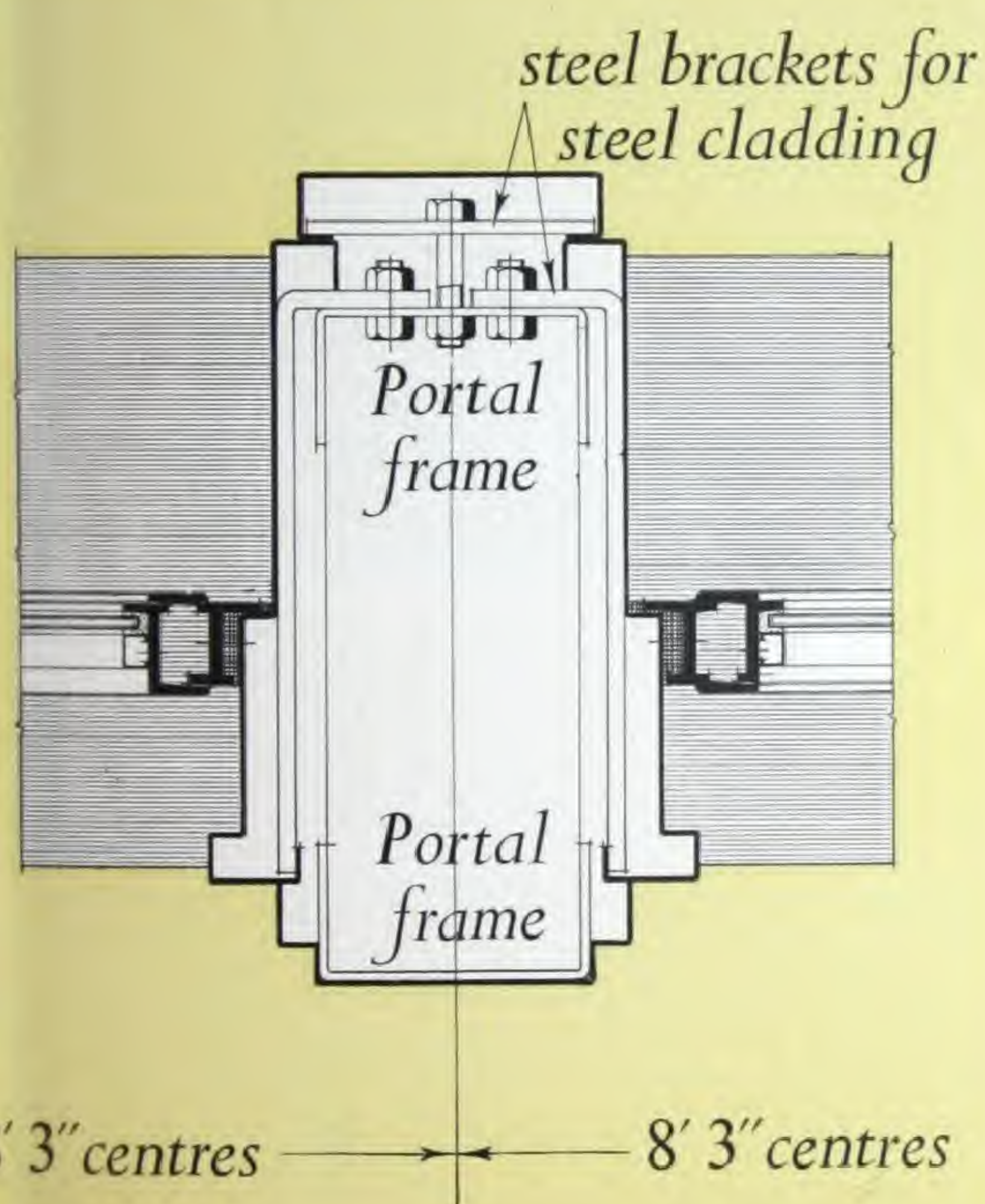
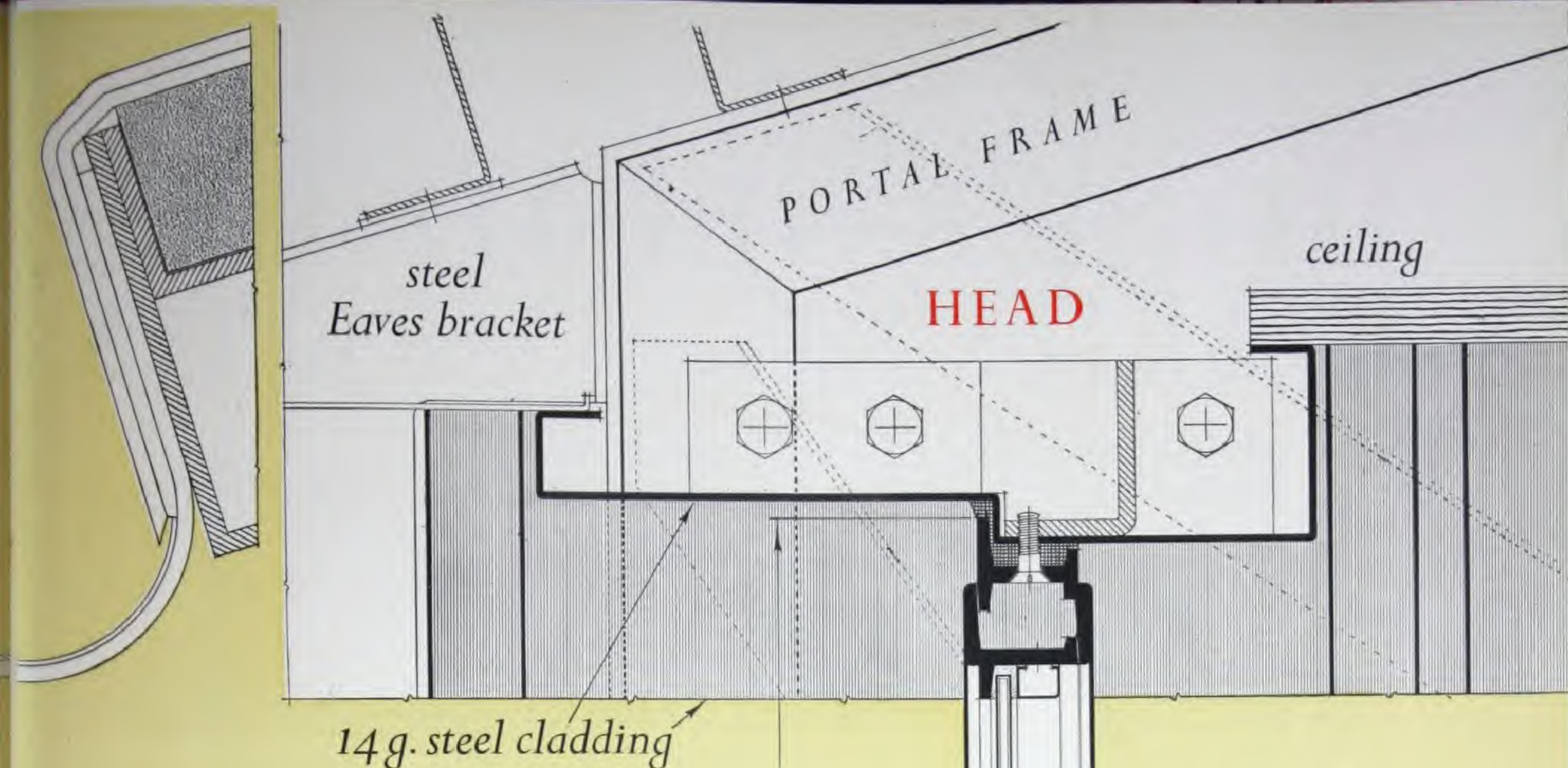


HARLESCOTT PRIMARY SCHOOL, SALOP *A. G. Chant, F.R.I.B.A., County Architect*

In many districts in Great Britain, particularly in the southern part of England, HOPE'S sliding and folding windows are demanded. These are made in two types; the one illustrated above moves on rollers on a bronze rail at the cill. Constructed of medium universal section and limited in height to 6 feet. Generally made in four leaves as above (two sliding in one direction and two in the other). Windows with an odd number of leaves are not supplied.

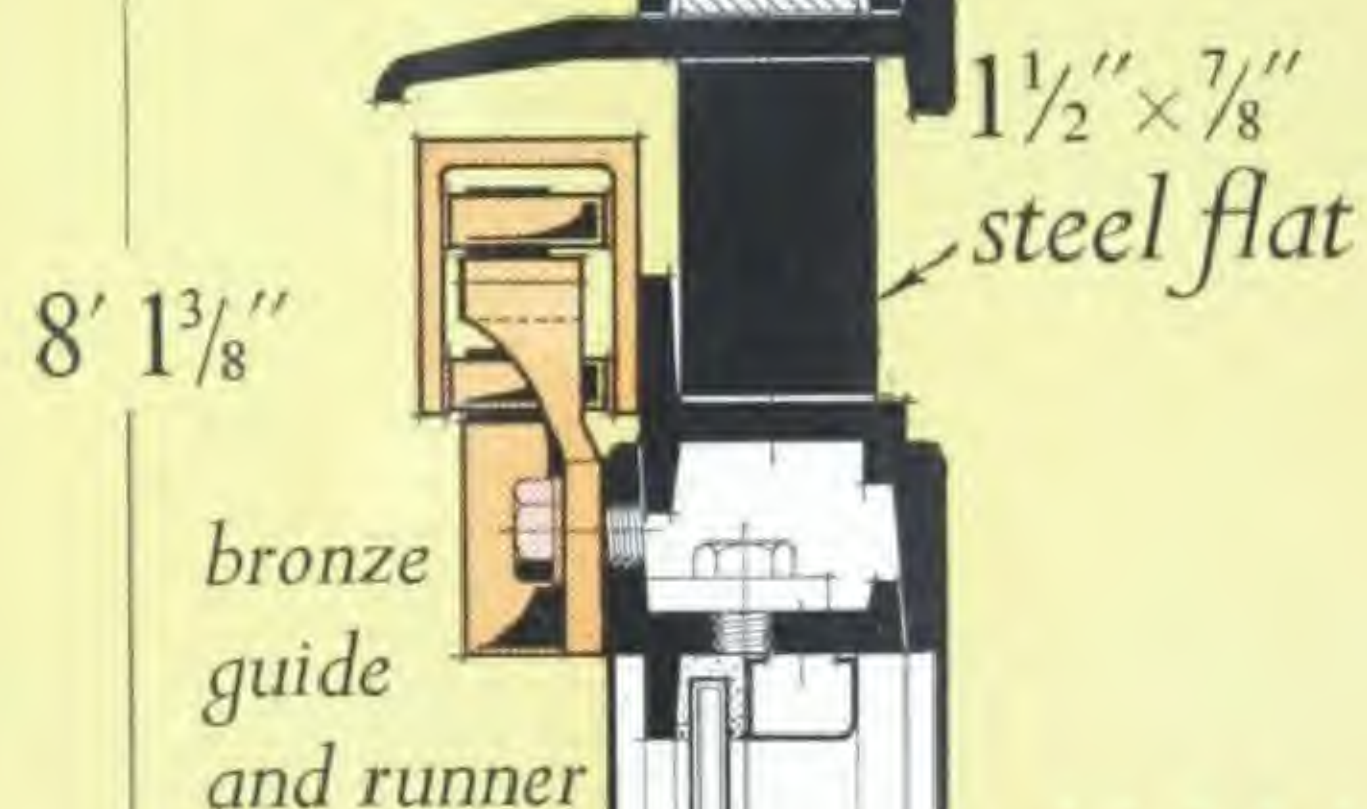
When combined with swinging ventilators above the transom, this makes an excellent window for the full range of the English climate.

The other type is made as sliding and folding DOORS, and is illustrated on pages 32 and 33.



STEEL CLADDING AROUND PORTAL
FRAME BETWEEN WINDOWS

QUARTER FULL SIZE



HALF Full Size
DETAILS

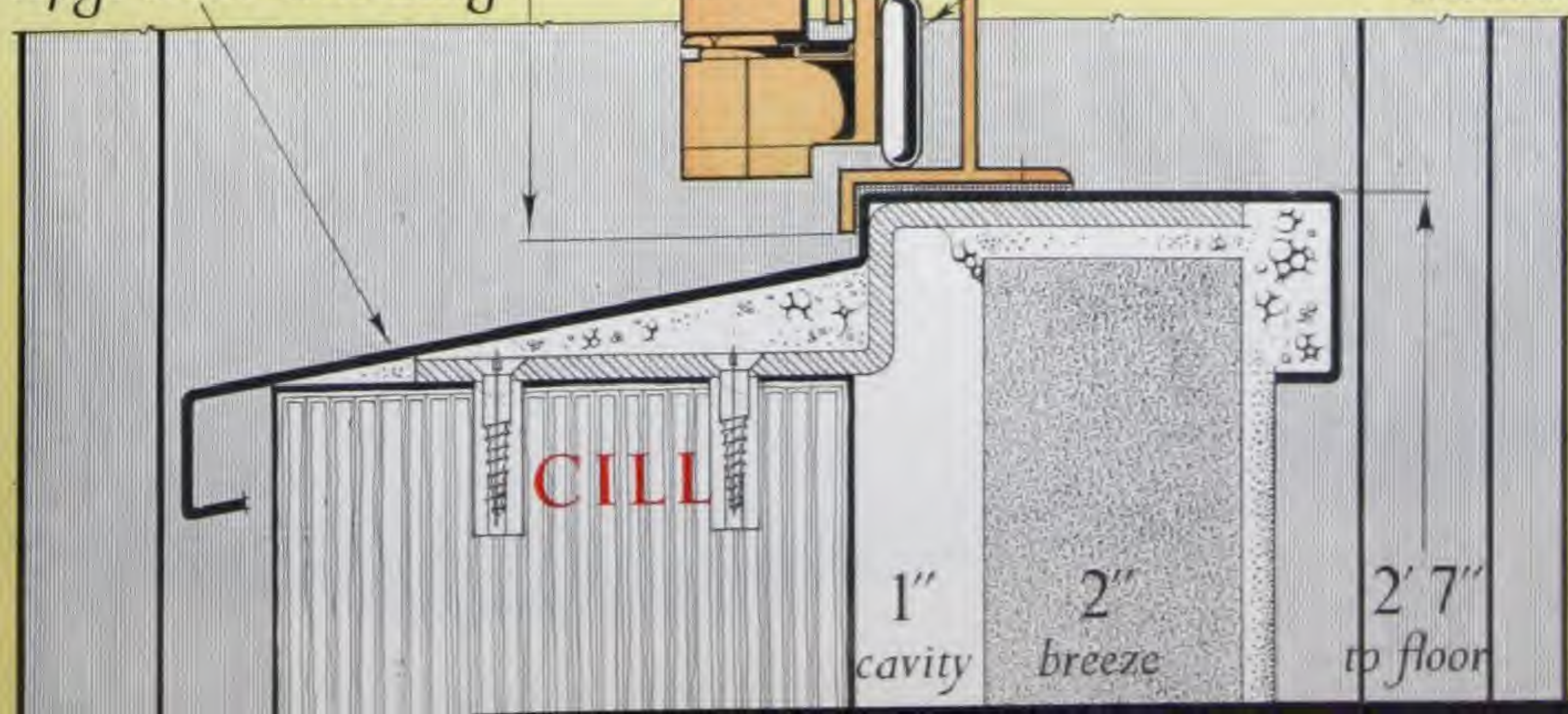


14 g. steel cladding

Inside

HARLESCOTT
COUNTY PRIMARY
SCHOOL, SALOP

A. G. CHANT, F.R.I.B.A.



HOPE'S SLIDING & FOLDING DOORS



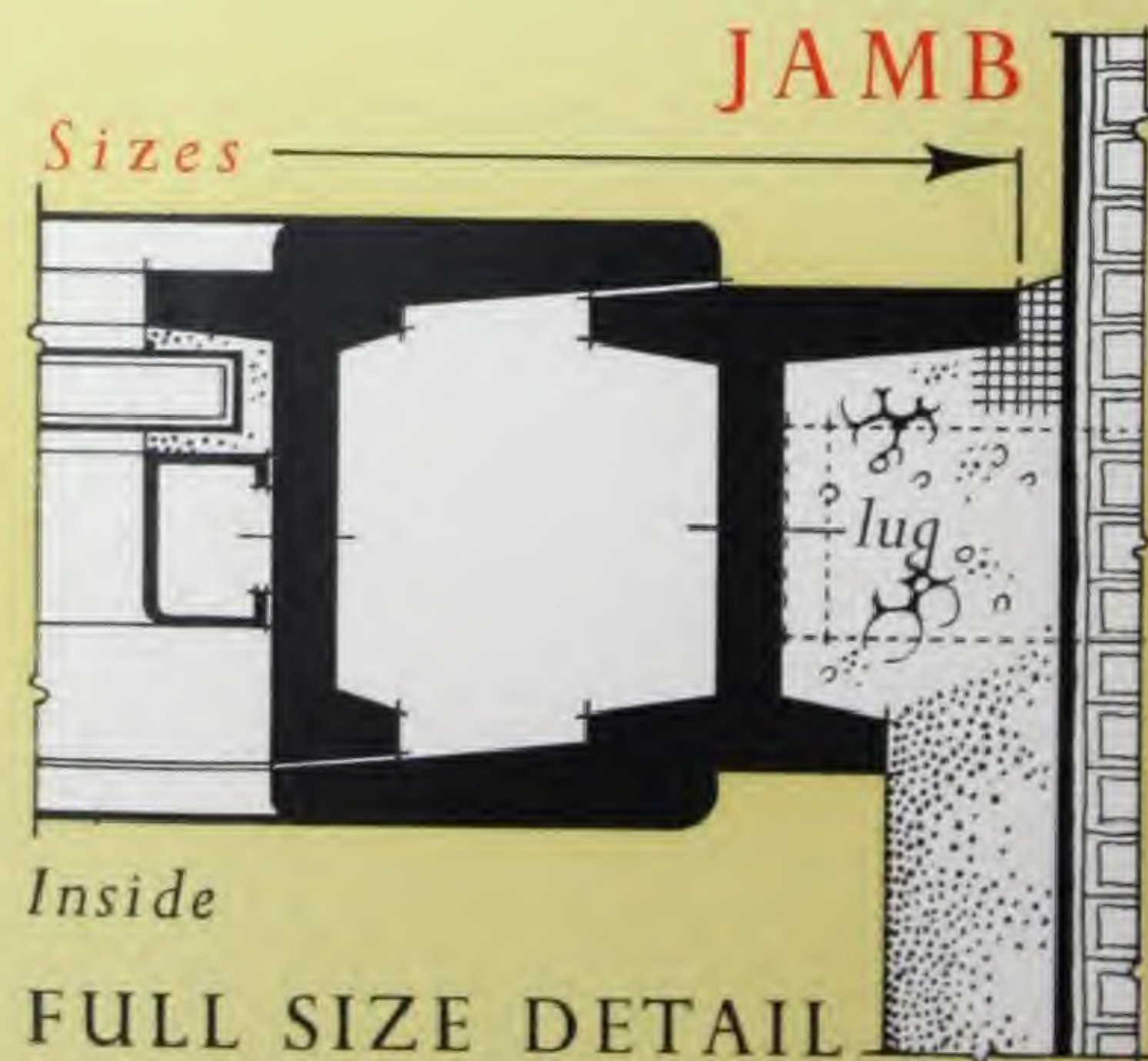
LINTON VILLAGE COLLEGE, CAMBS.

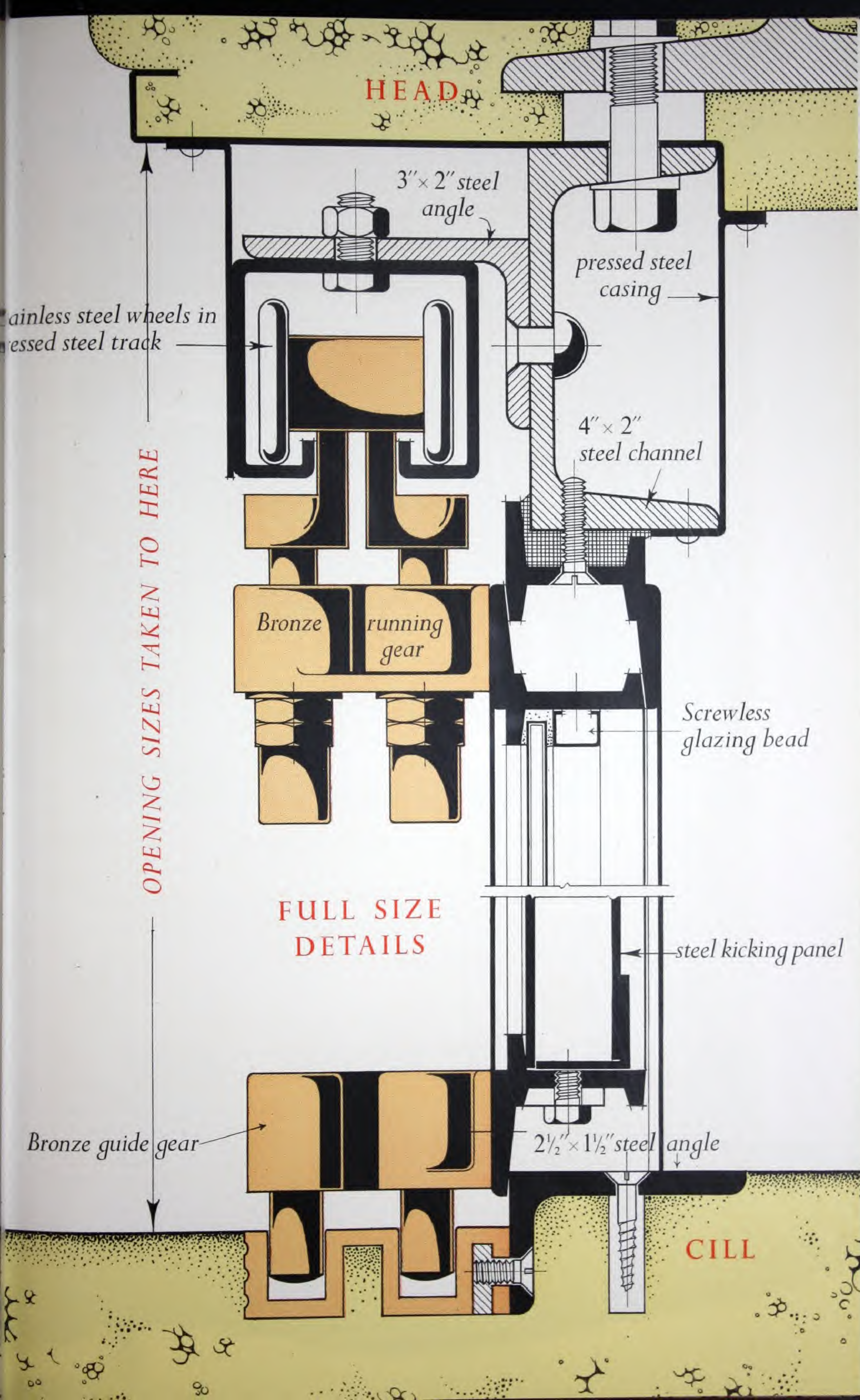
S. E. Urwin, F.R.I.B.A., Architect

These sliding and folding doors differ from the windows illustrated on pages 30 and 31 inasmuch as they are designed to be used as doors with no obstruction at cill level.

They are made in our heavy universal section and hung on Hope's overhead tracks, as shown full size on the opposite page.

We advise a ventilator above transom for use when the doors must be kept closed during inclement weather.





HEAD

3" x 2" steel
angle

pressed steel
casing

stainless steel wheels in
pressed steel track

4" x 2"
steel channel

Bronze
running
gear

Screwless
glazing bead

OPENING SIZES TAKEN TO HERE

FULL SIZE
DETAILS

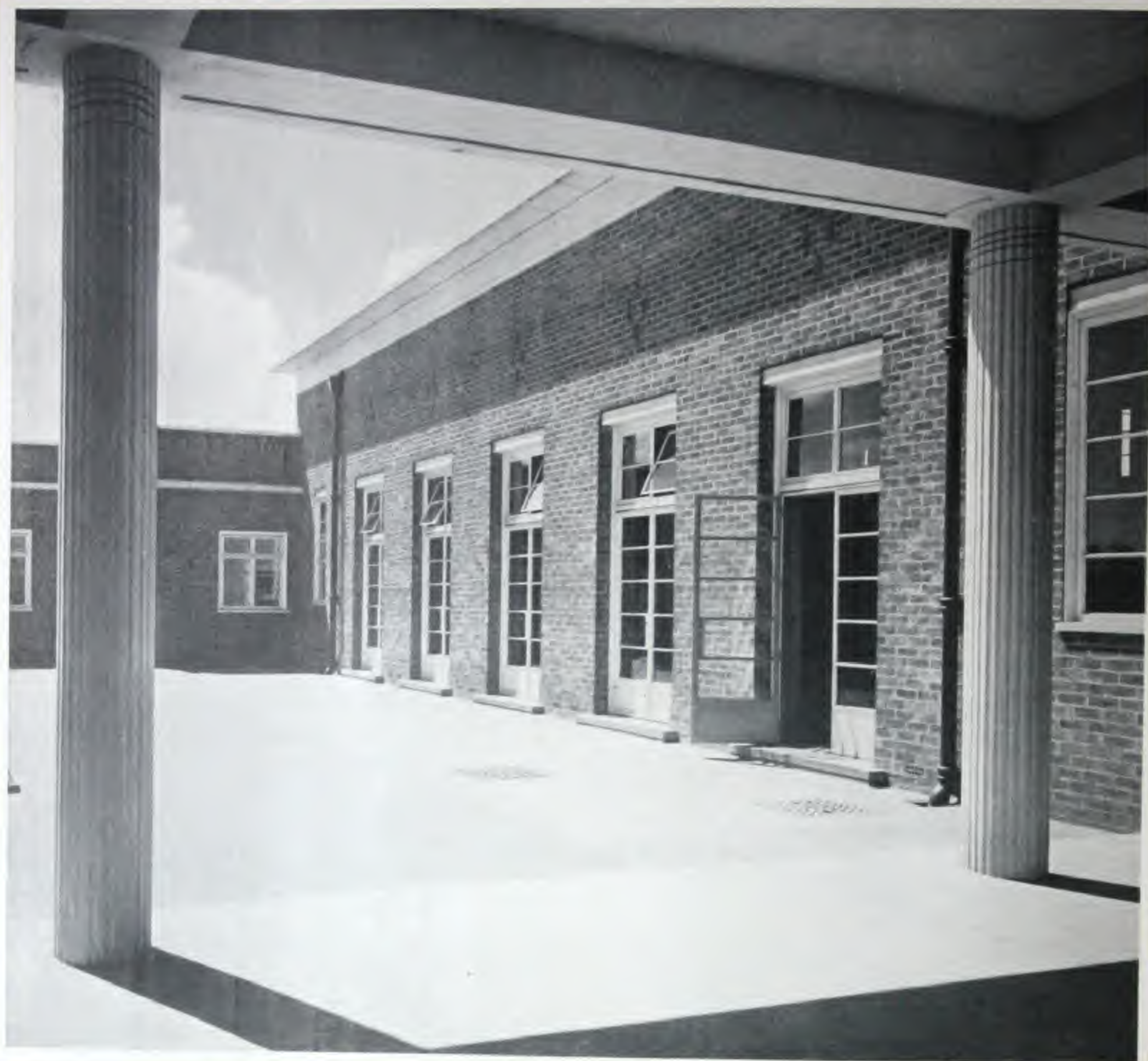
steel kicking panel

Bronze guide gear

2 1/2" x 1 1/2" steel angle

CILL

HOPE'S *Casement* DOORS



DAVYHULME SCHOOL, LANCS. *Thomas Worthington & Sons and Francis Jones, FF.R.I.B.A., Architects*

Doors of our standard door sections fitted with a mortice lock and used in combination with swings over the transom provide very efficient lighting and ventilation through a wide range of climate for schools, hospitals and similar buildings.

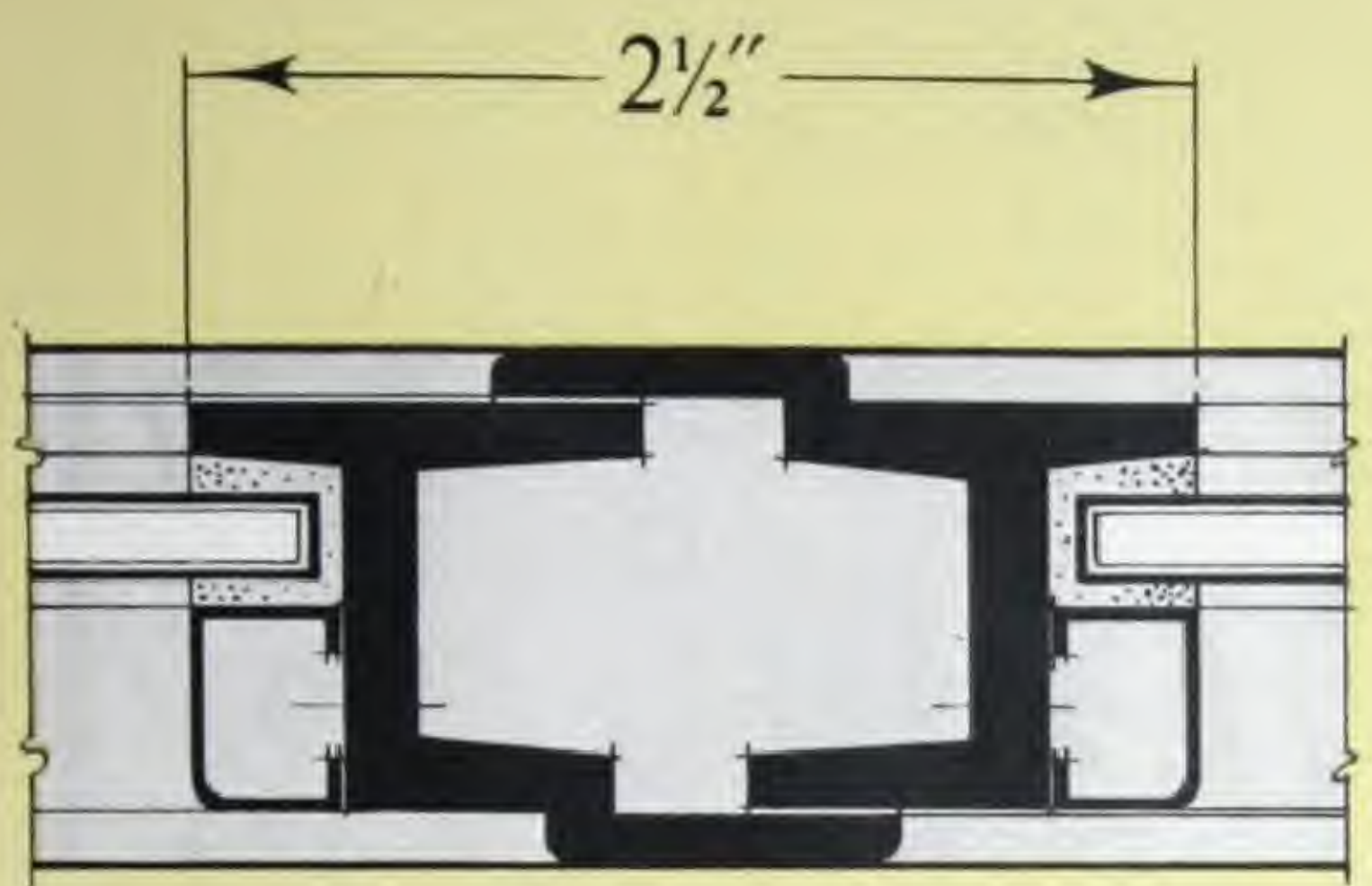
The standard detail is shown full size on the opposite page, with alternative design for the cill.

The doors may be double or single to open inwards or outwards, and each pair is fitted with concealed bolts on the second opening leaf and high quality lock and furniture on the other leaf.

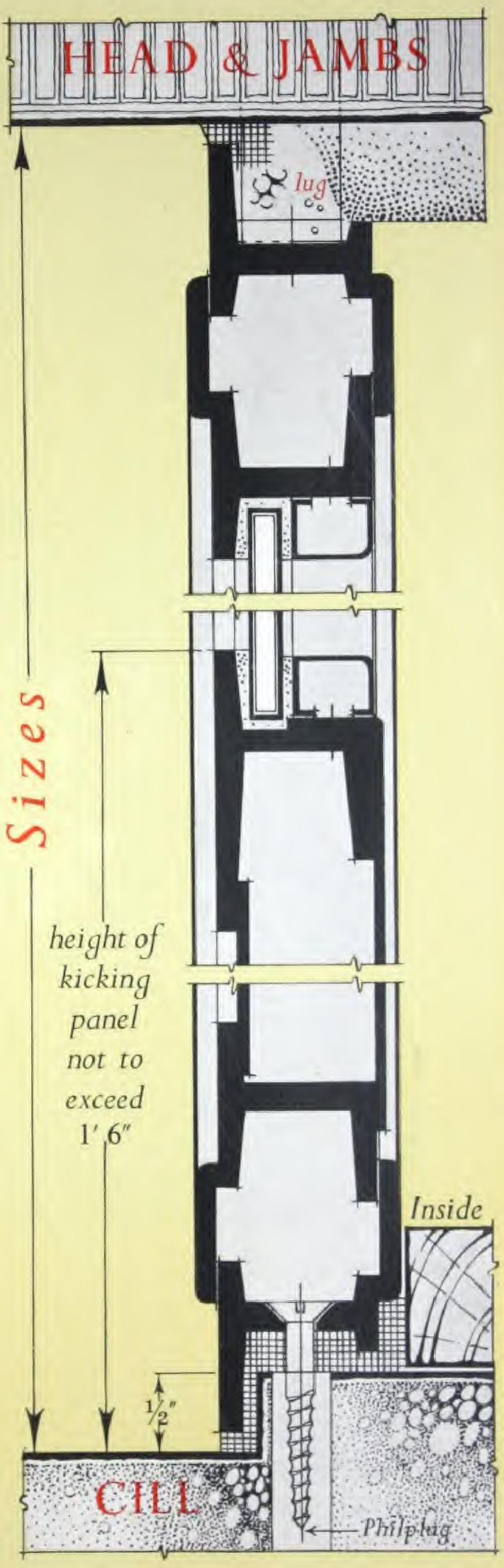
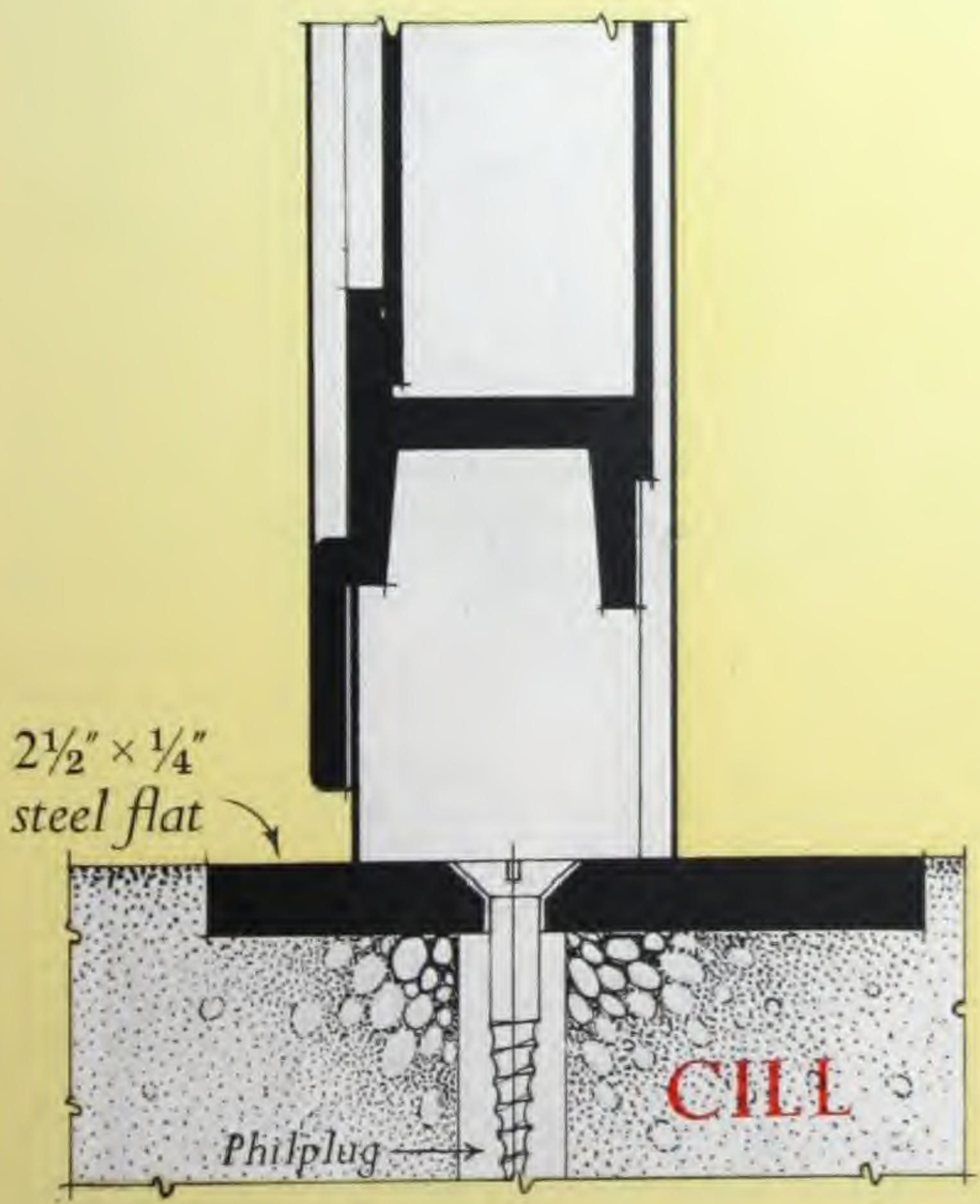
HOPE'S Casement DOORS

FULL SIZE DETAILS

MEETING RAIL
for folding doors



ALTERNATIVE
CILL DETAIL



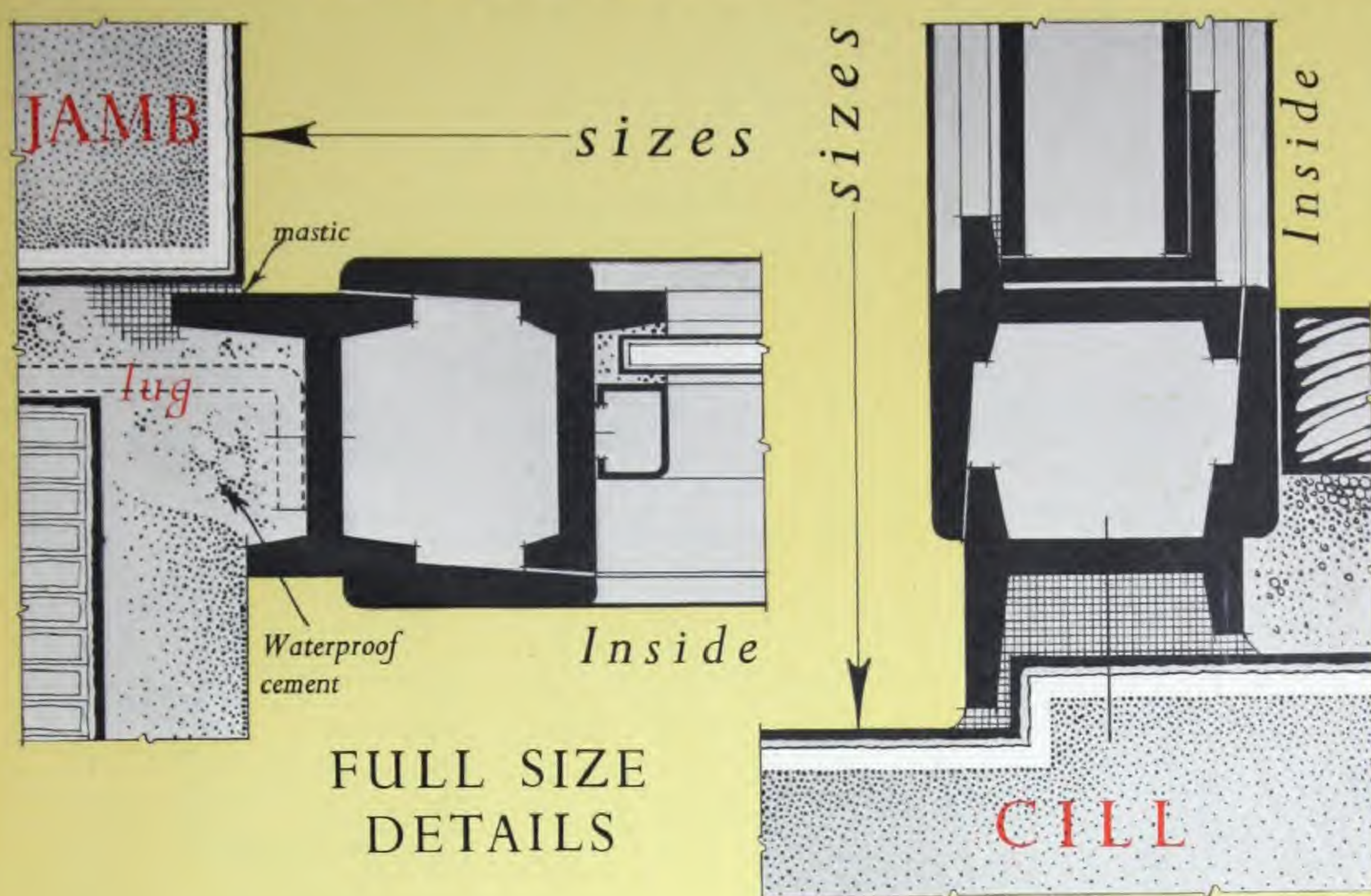
HOPE'S *Casement* DOORS IN HEAVY SECTION



British Electricity Authority, Birmingham *J. Alfred Harper & Son, Chartered Architects*

A pair of doors, with sidelights and transom light, in a modern office building. Where locks have to be *en suite*, or where other special fittings are required, doors are made in Hope's Heavy (H.A.) Section as shown on the opposite page; they are made to customer's own sizes and fitted with locks and furniture of any required pattern. Locks may be housed between two horizontal bars if preferred, making a narrow pane across the centre instead of the vertical pane illustrated above.

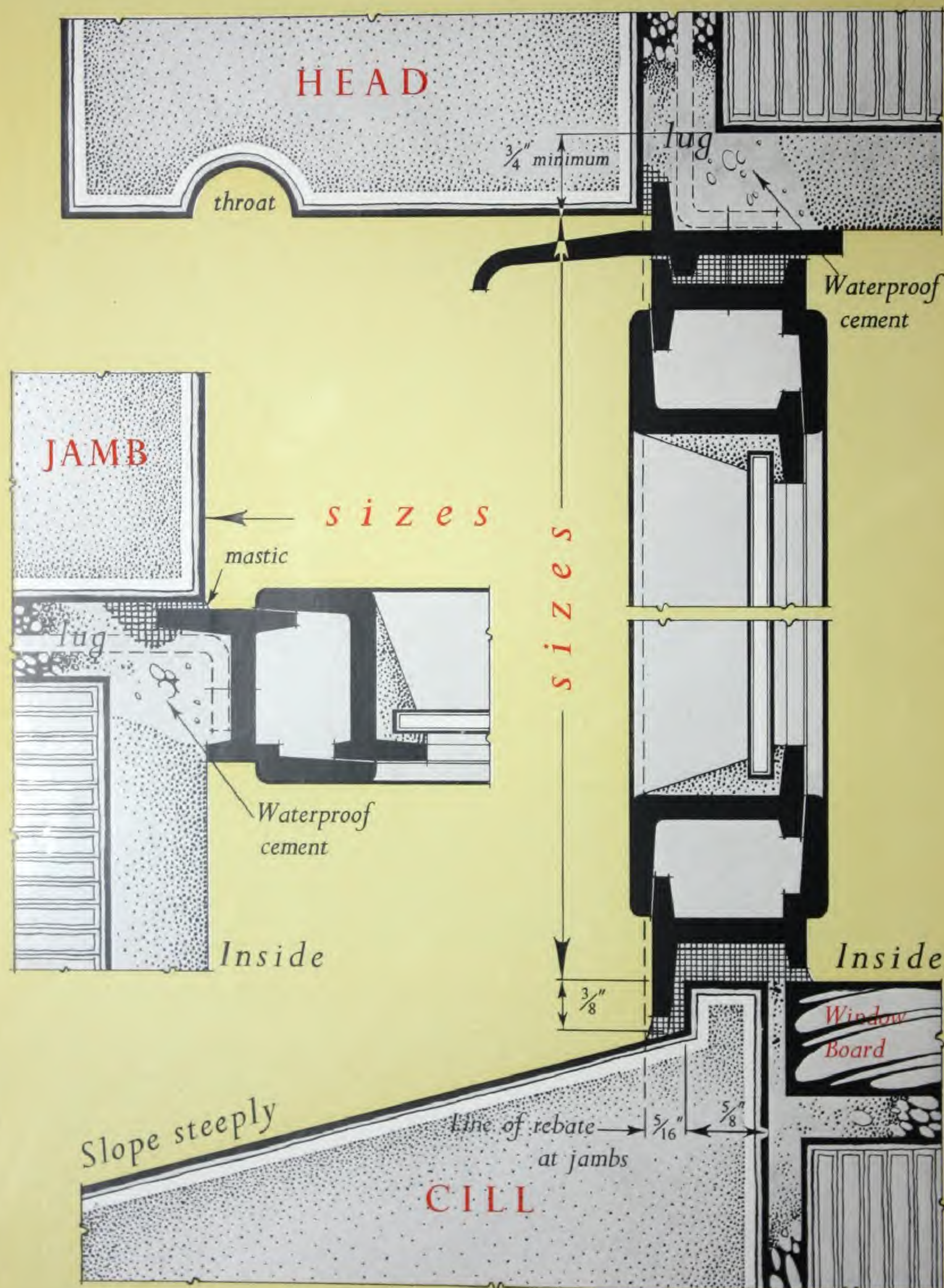
HOPE'S CASEMENT DOORS *in* HEAVY SECTION



*The following pages 38-45
are devoted to Fixing Details
showing the application of Steel Windows
to various forms of construction*

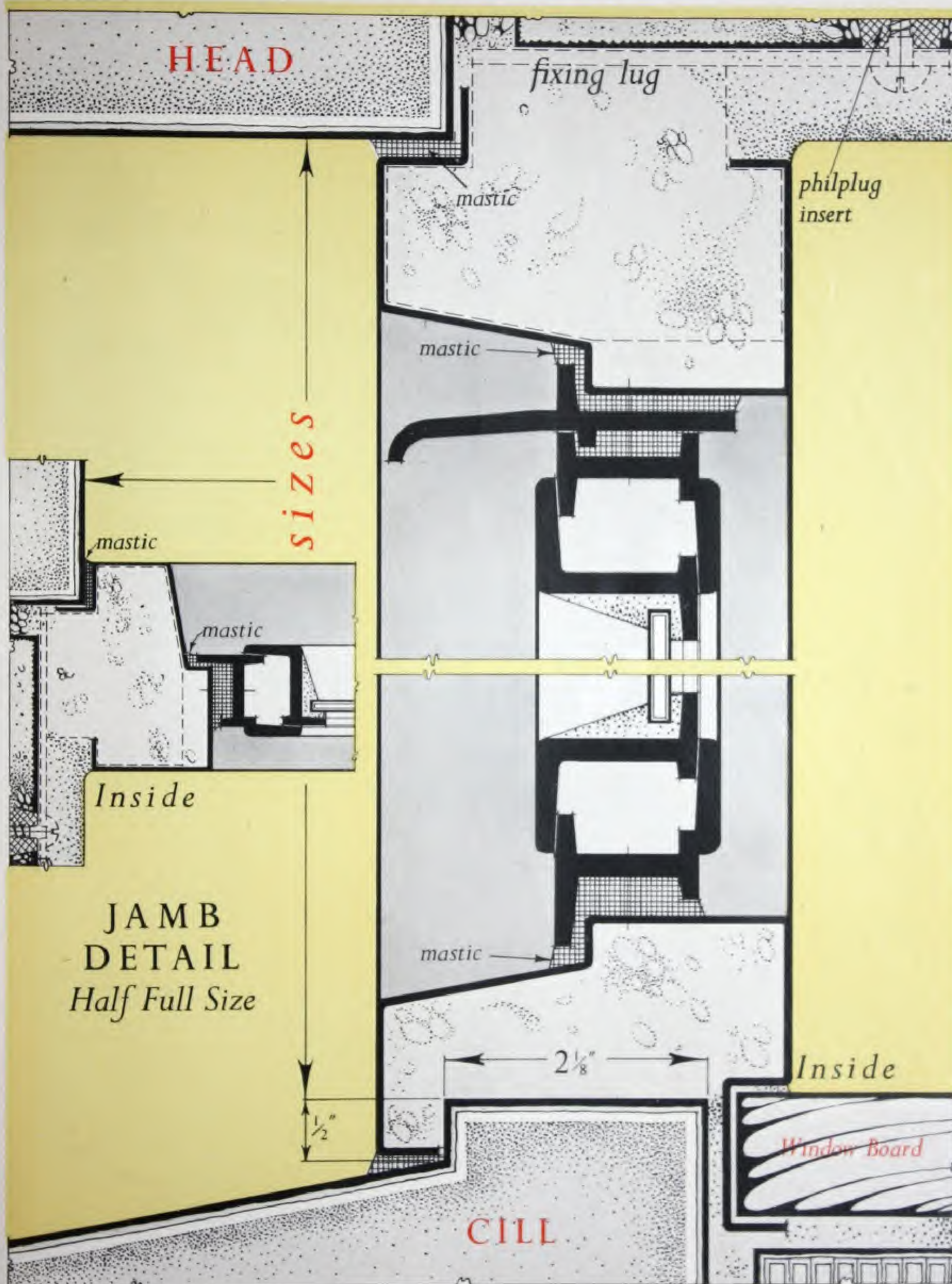
FIXING DETAILS

NORMAL MASONRY DETAIL • *Full Size*



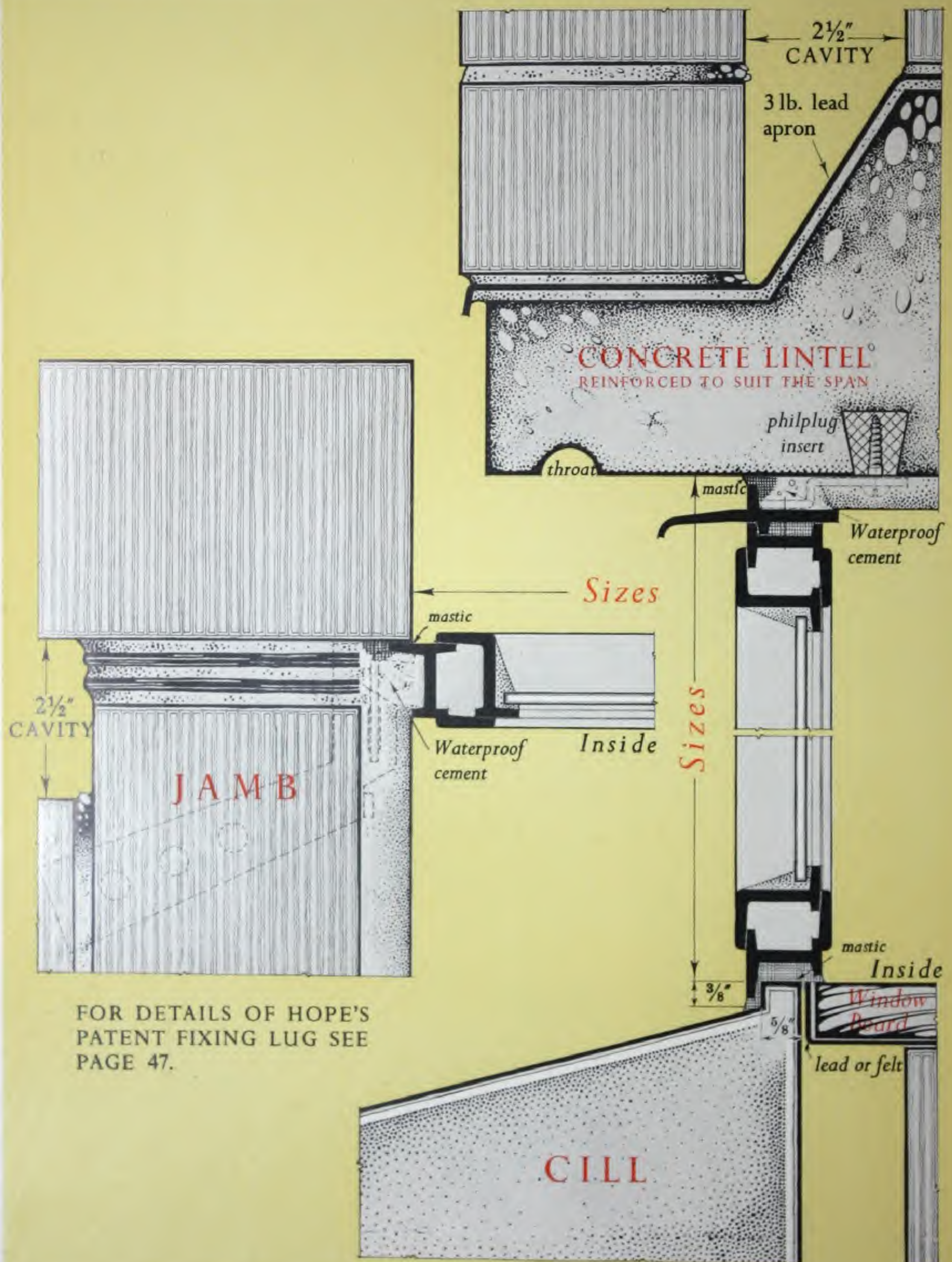
FIXING DETAILS

WITH SUB-FRAME • *Full Size*



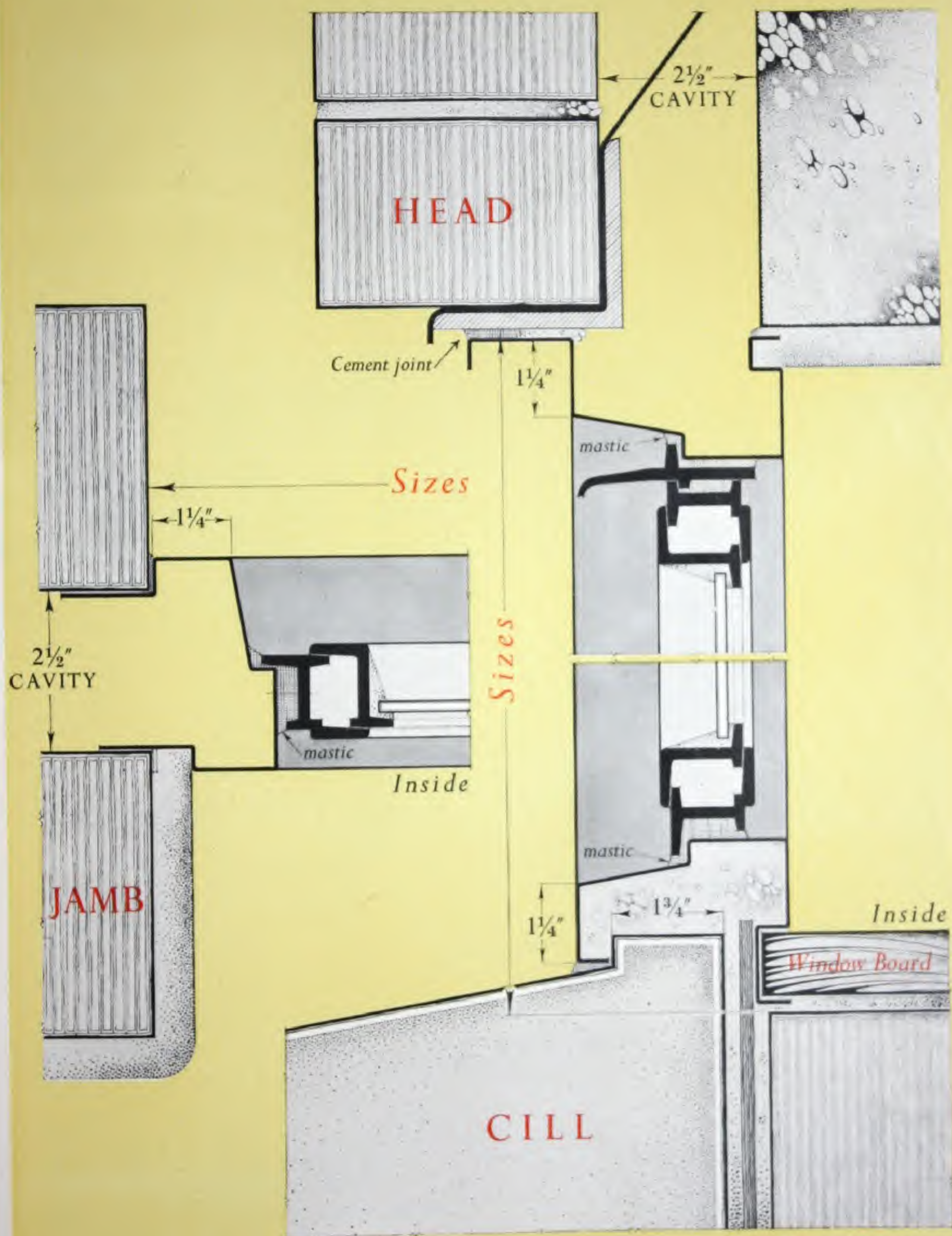
FIXING DETAILS

IN CAVITY WALL • *Half Full Size Details*



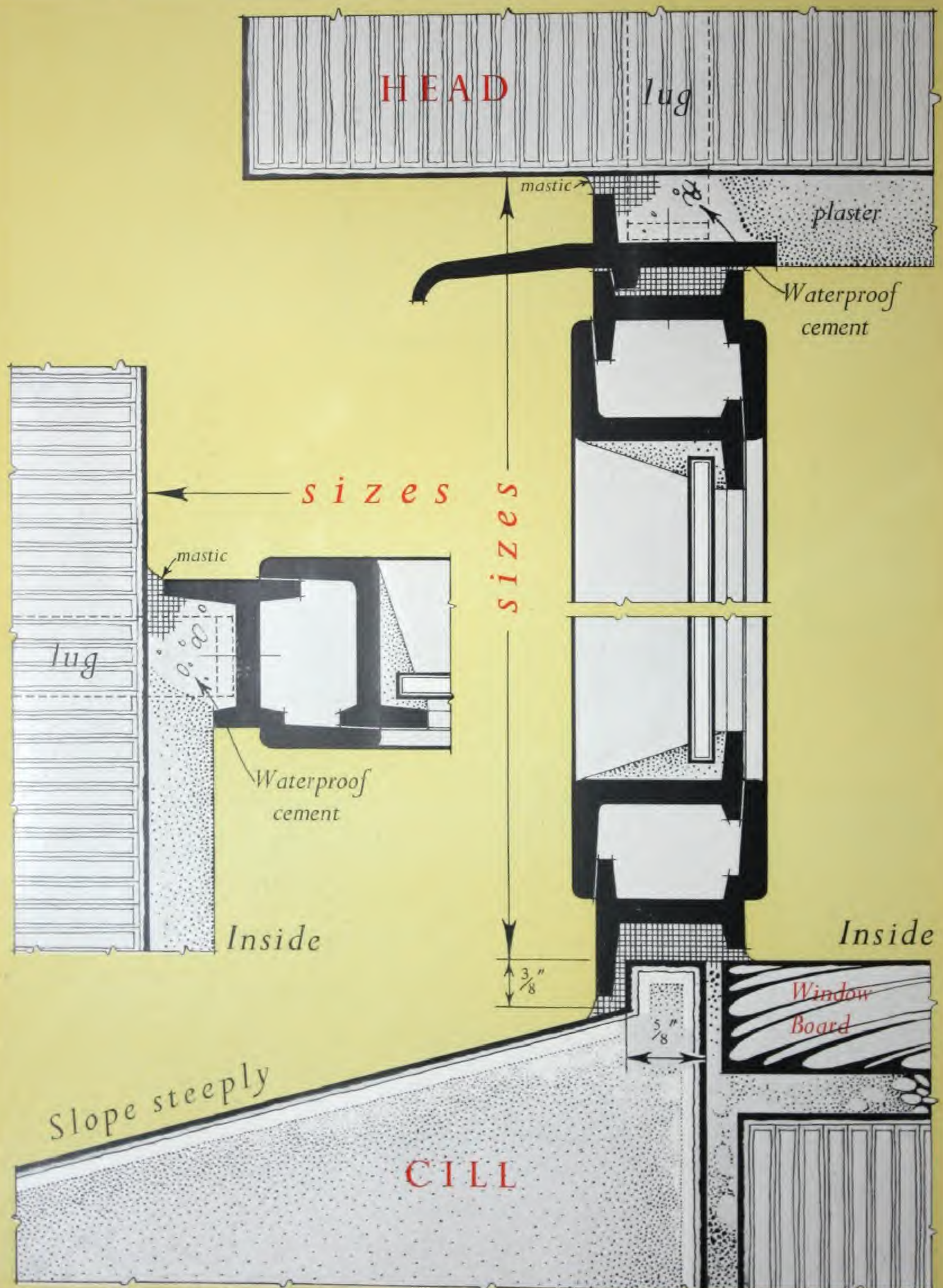
FIXING DETAILS

With 'CAVITY' SUB-FRAME · *Half Full Size*



FIXING DETAILS

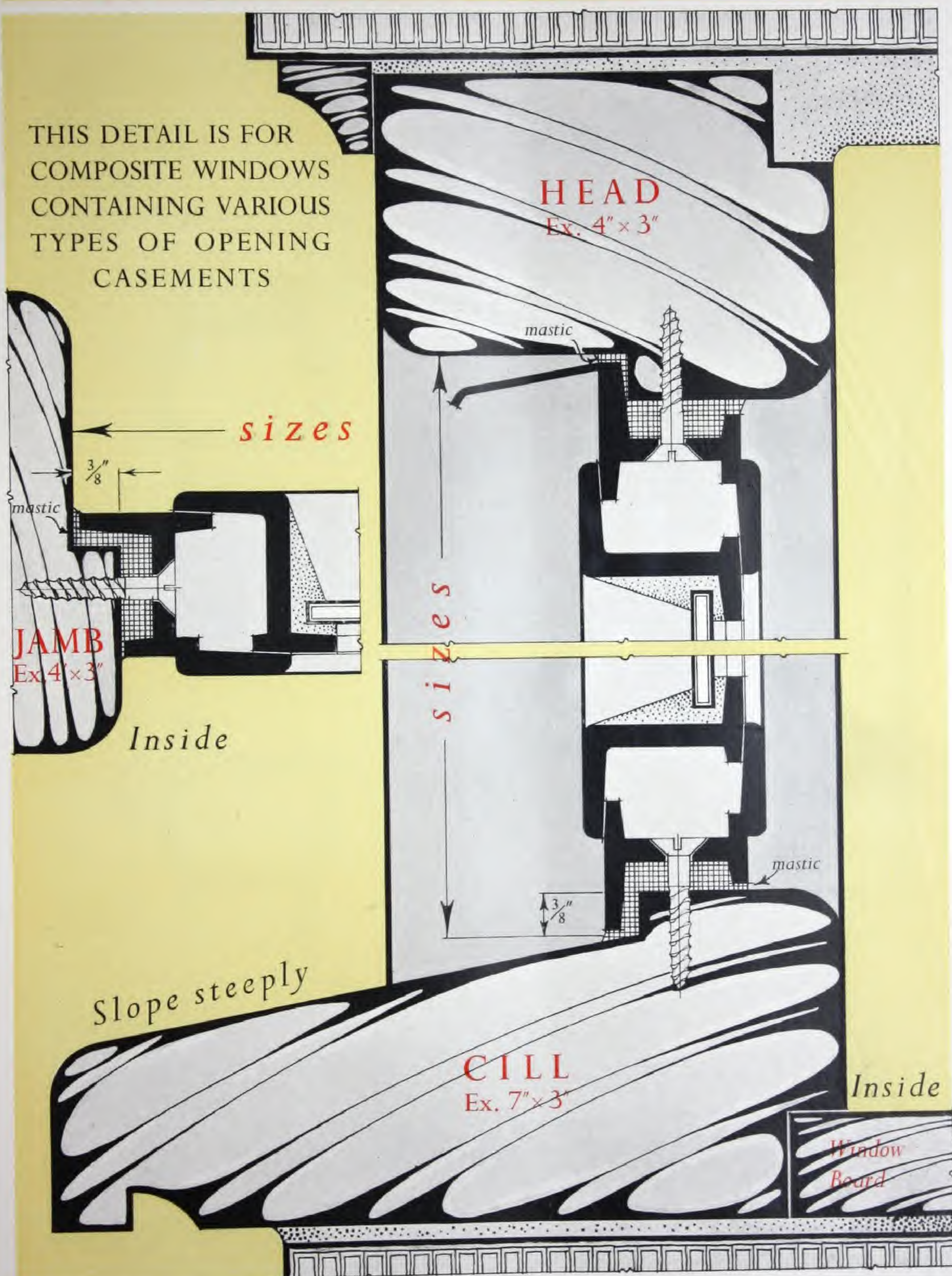
IN PLAIN REVEAL • *Full Size*



FIXING DETAILS

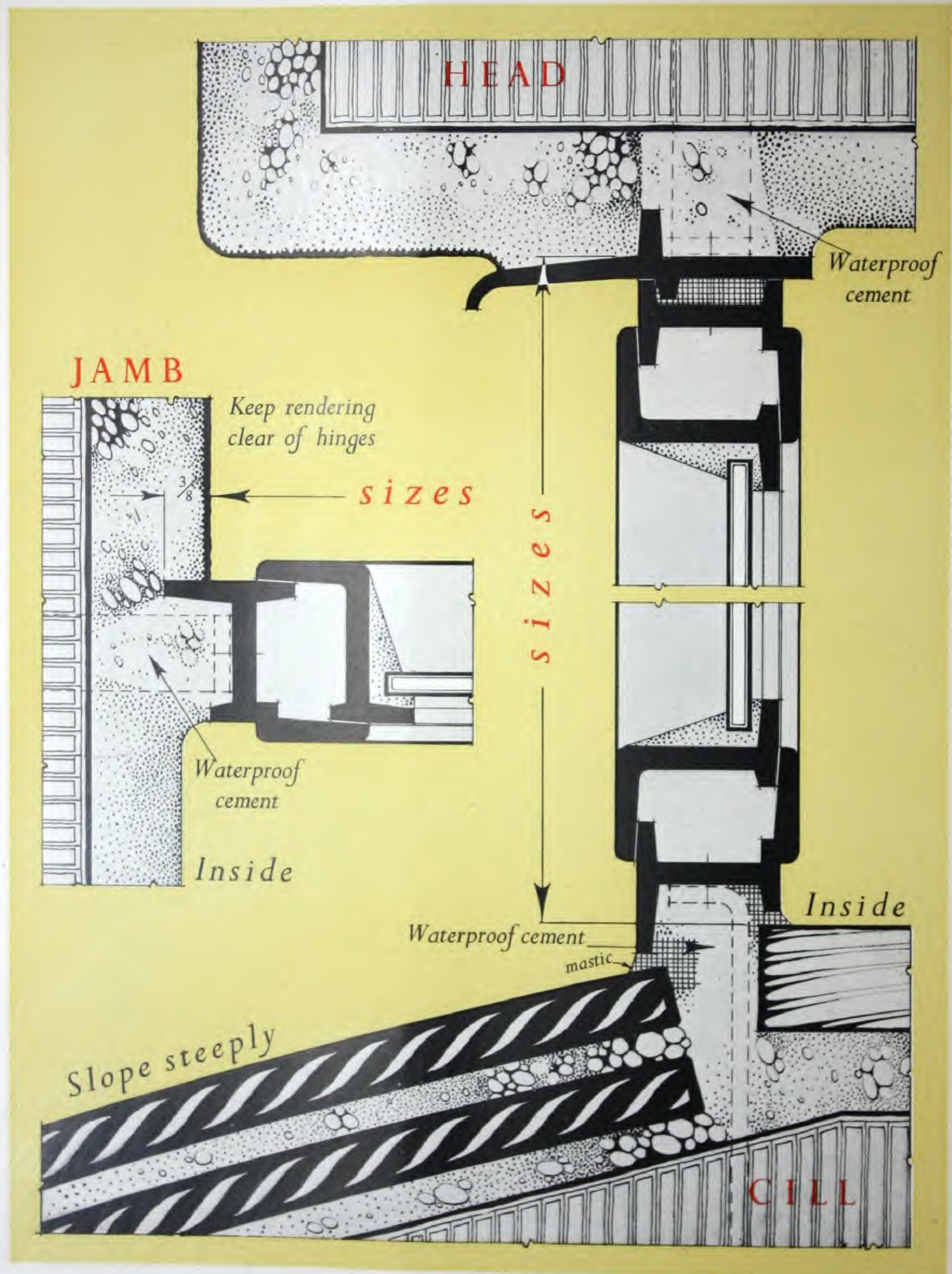
IN WOOD FRAME • *Full Size*

THIS DETAIL IS FOR
COMPOSITE WINDOWS
CONTAINING VARIOUS
TYPES OF OPENING
CASEMENTS

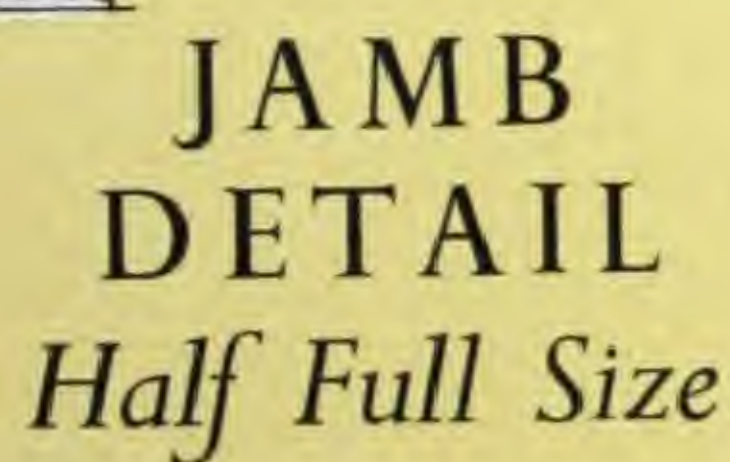


FIXING DETAILS

FOR CEMENT FINISH • *Full Size*



IN SUB-FRAME · *Half & F.S. Details*



HOPE'S WINDOWS

INSTRUCTIONS FOR FIXING

FOR STONE, TERRA COTTA, CONCRETE or BRICK

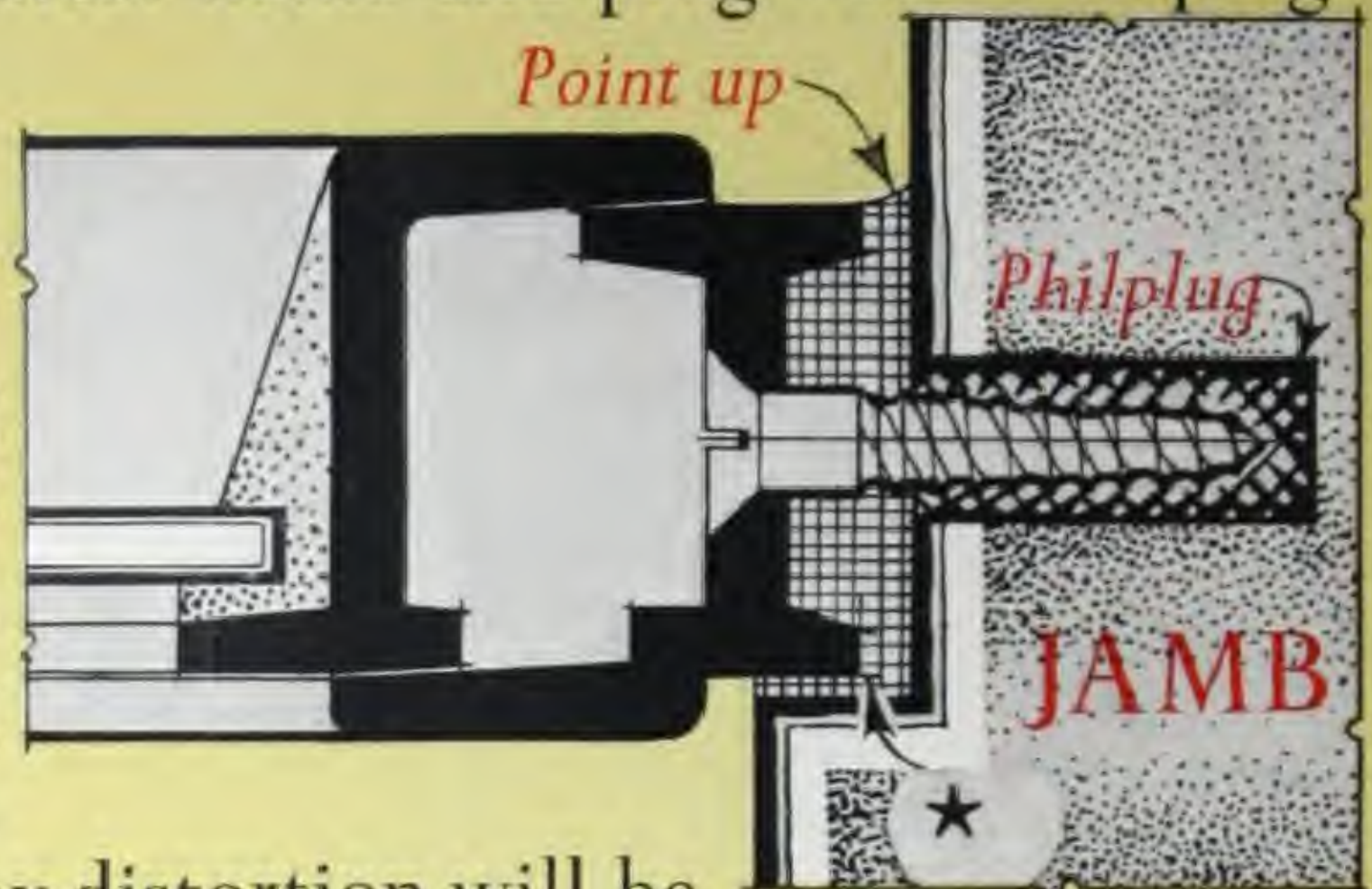
1. Cut $\frac{3}{8}$ " diam. holes opposite holes in steel frame and plug with 'Philplug' which will be supplied on request.

2. Put a bed of mastic around rebate.★

3. Fill channel of window frame with mastic.

4. Push frame squarely into the opening without using force. If opening is not large enough or is not square, it must be eased. Screw window frame to 'Philplug' taking care not to distort or twist in screwing up.

To test fit, close casement gently when any distortion will be shown by imperfect fit of casement. This should be corrected by loosening fixing screws, wedging frame to correct position and screwing up. Clean off surplus mastic and tuck and point on both sides.



WOOD FRAMES

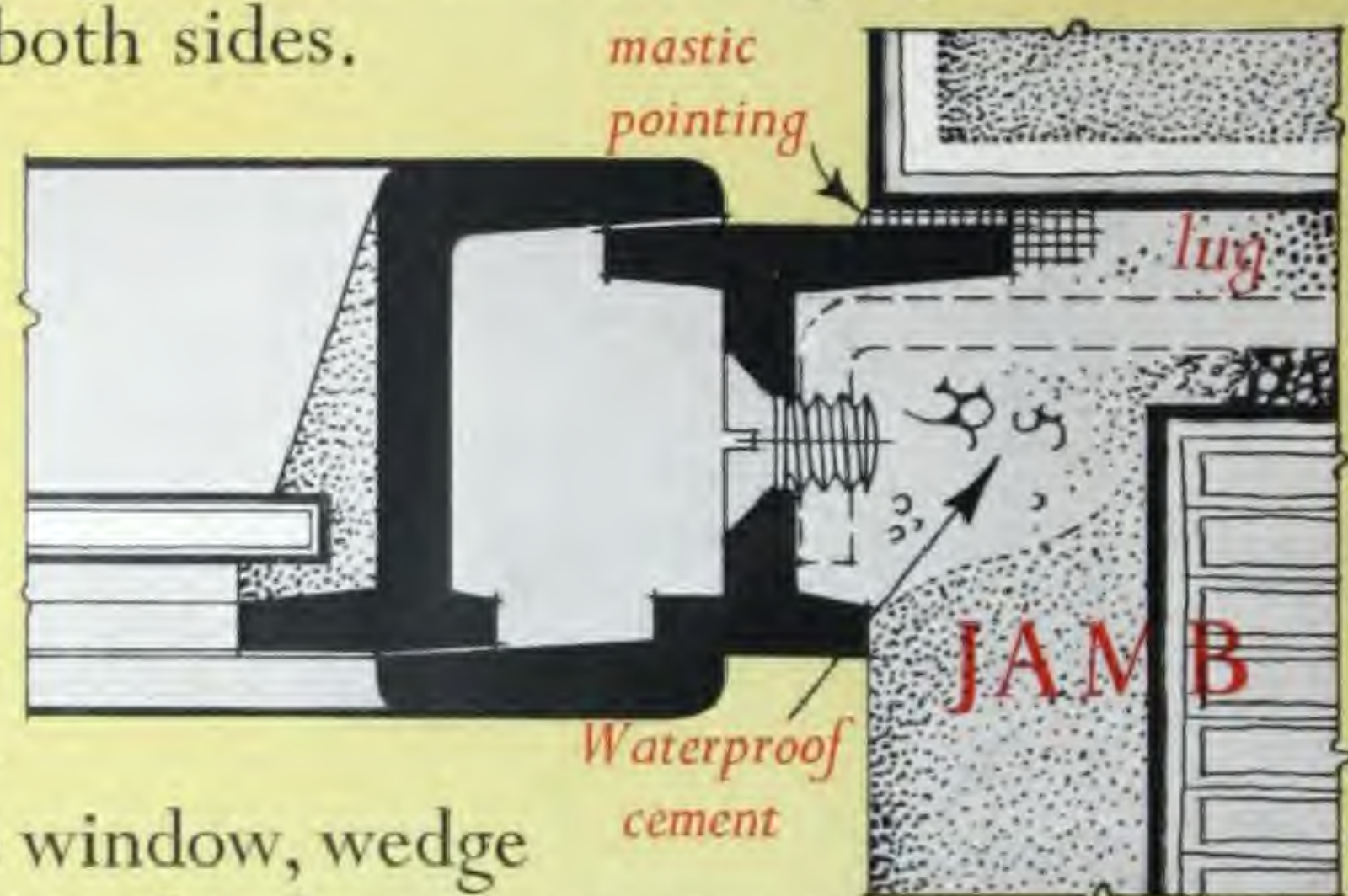
The above instructions hold good except that 'Philplug' is not required.

NORMAL MASONRY

1. Cut slots to accommodate lugs in correct positions. Place lugs in slots.

2. Place frame in opening, level and upright. Screw frame to the lugs, plumb the window, wedge and cement the lugs in position. Allow time for the cement to set.

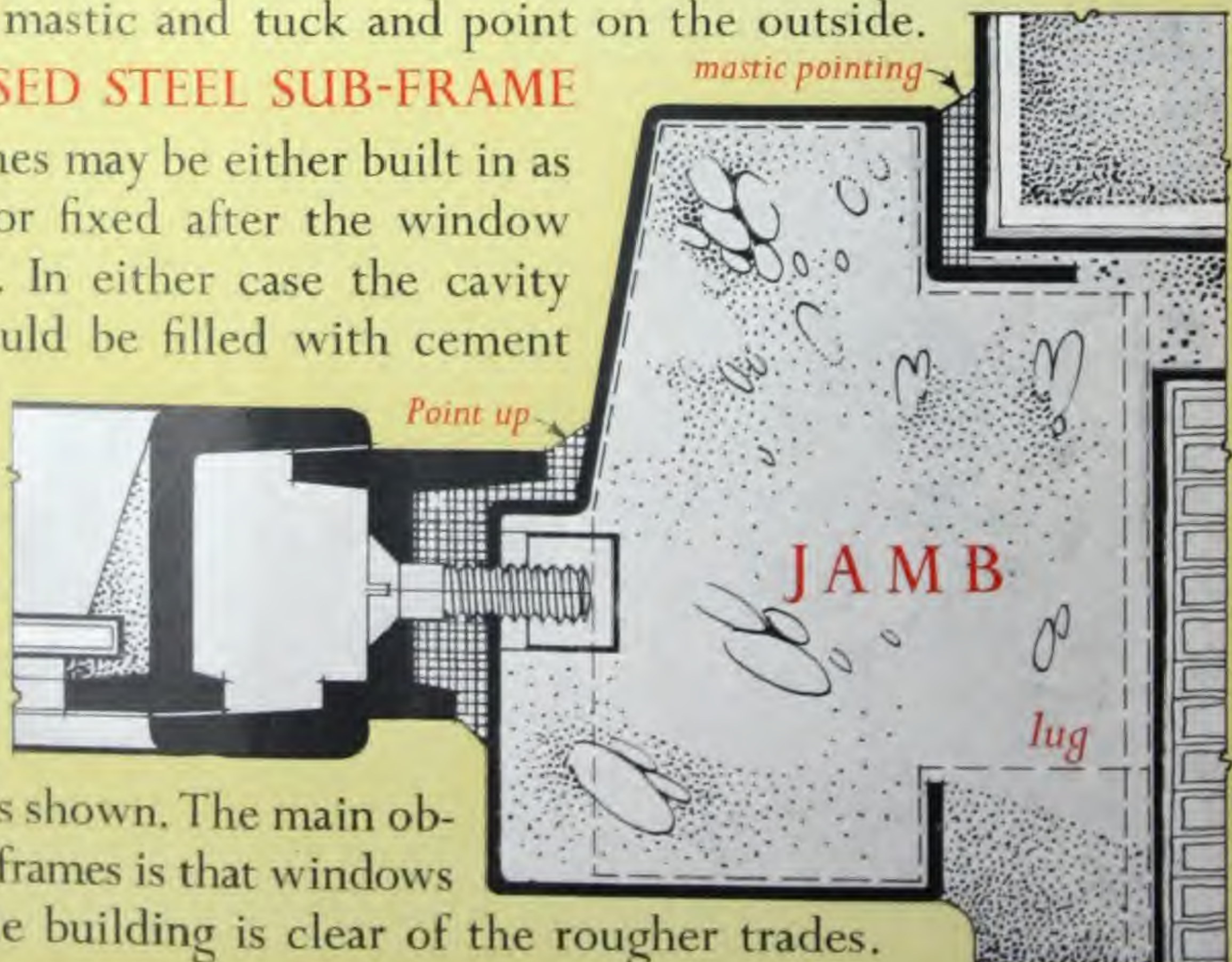
3. Clean off surplus mastic and tuck and point on the outside.



FIXING with PRESSED STEEL SUB-FRAME

Pressed steel sub-frames may be either built in as the work proceeds, or fixed after the window openings are formed. In either case the cavity of the sub-frame should be filled with cement compo 1 to 3, so as to make a solid and watertight joint between the steel sub-frame and the masonry. The sub-frame should be

pointed with mastic as shown. The main object for the use of sub-frames is that windows may be fixed after the building is clear of the rougher trades.

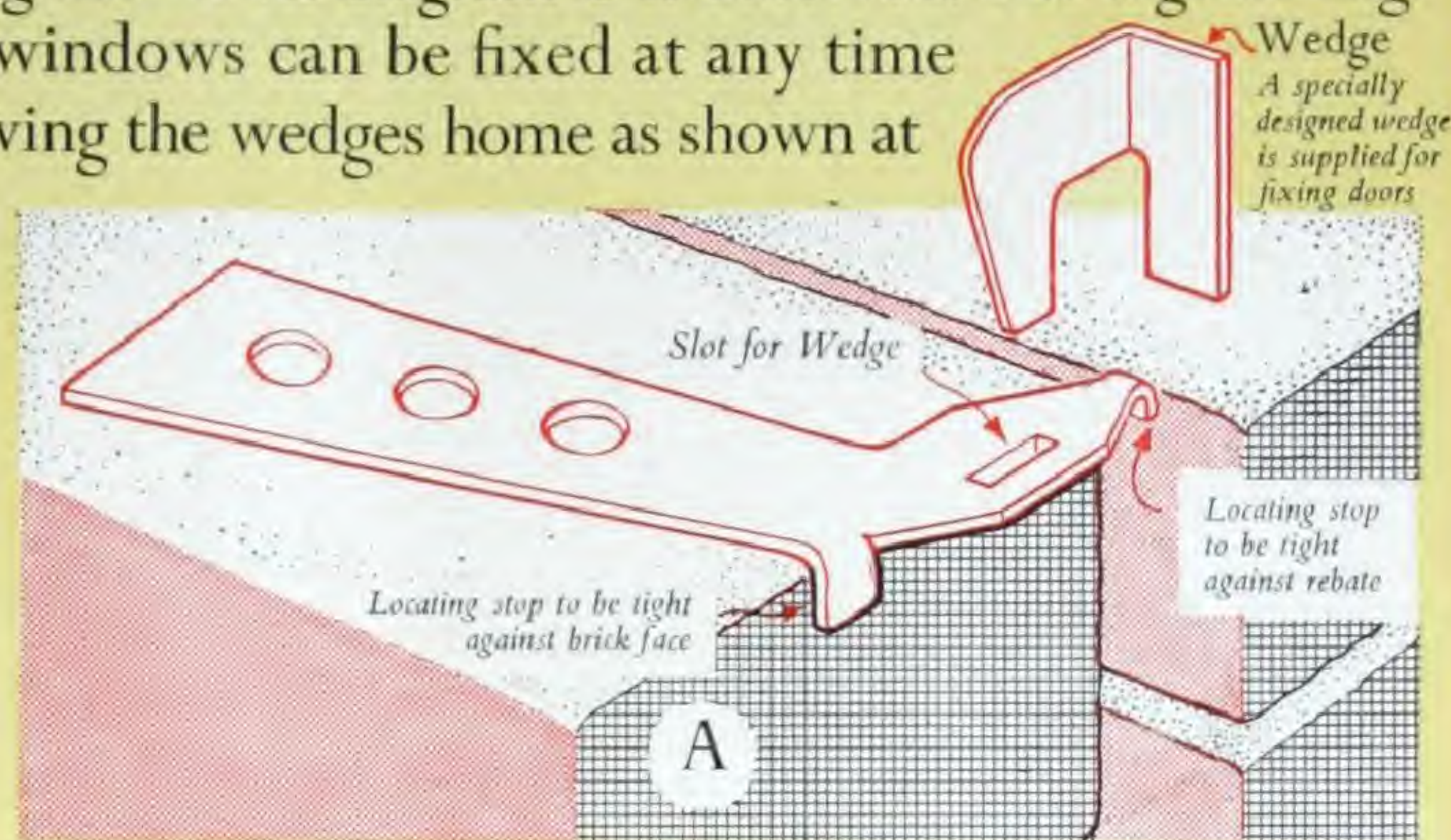


HOPE'S WINDOWS

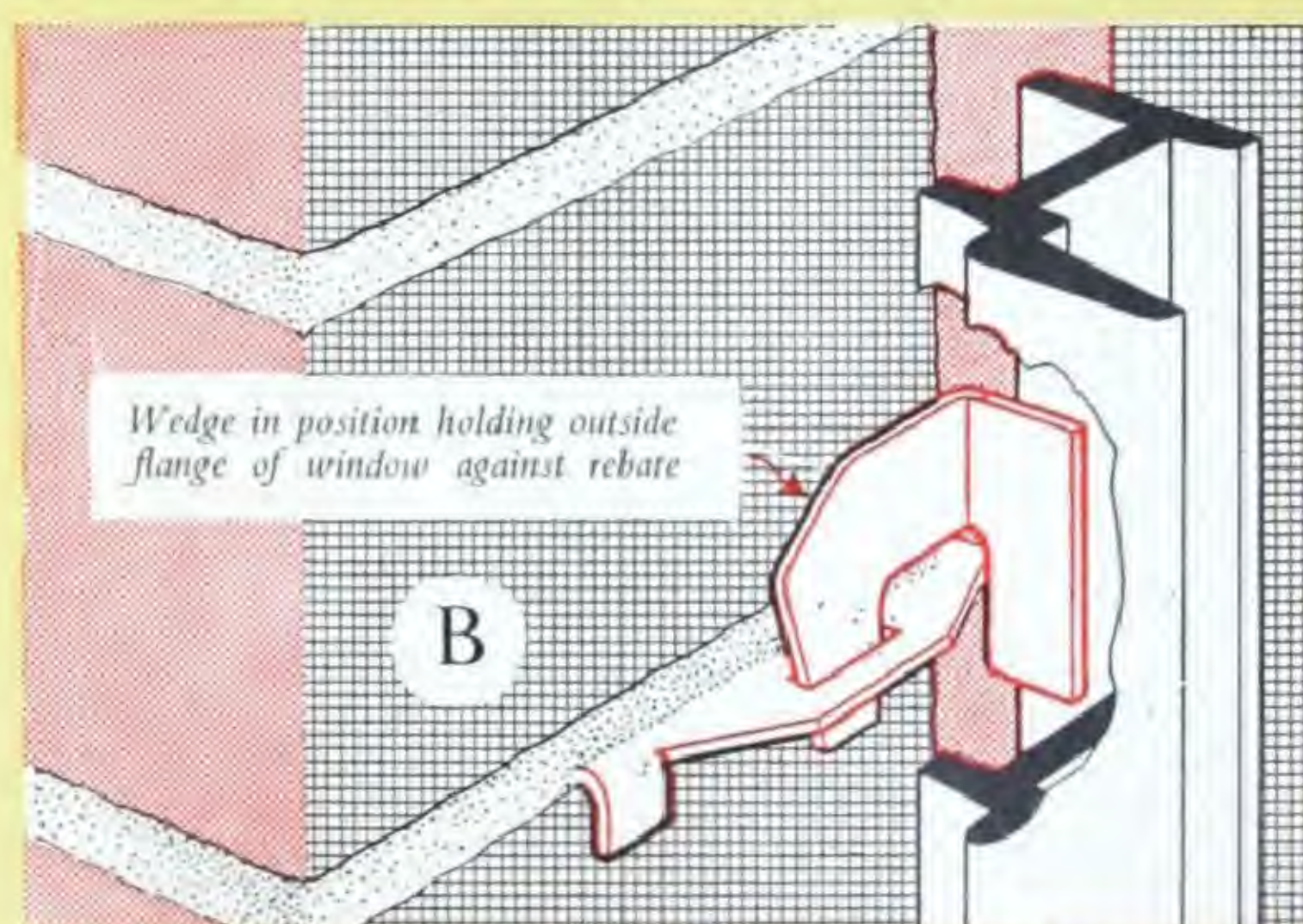
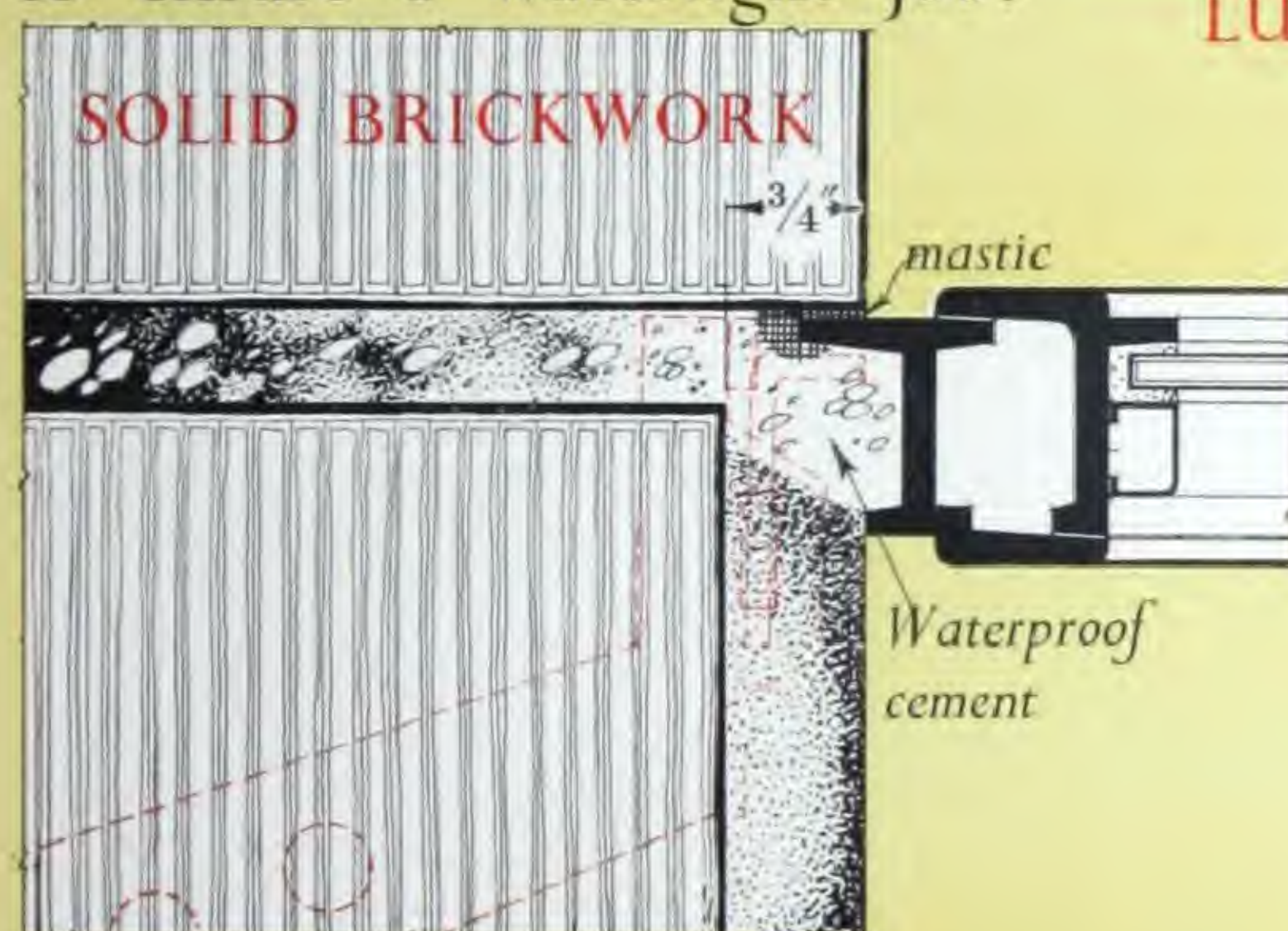
HOPE'S PATENT FIXING LUG Patent No. 427344/33

In order to avoid cutting and plugging walls after openings have been built, we have devised the fixing lug illustrated on this page. The lugs are supplied to the builder for building in to the joints of the brickwork as the building goes up, as shown at A, and it should be noted that the exact joint in which each lug is placed is immaterial so long as the approximate spacing shown on diagram C is observed. The lugs having been correctly set in position, windows can be fixed at any time convenient to the builder, by driving the wedges home as shown at B. This invention is particularly

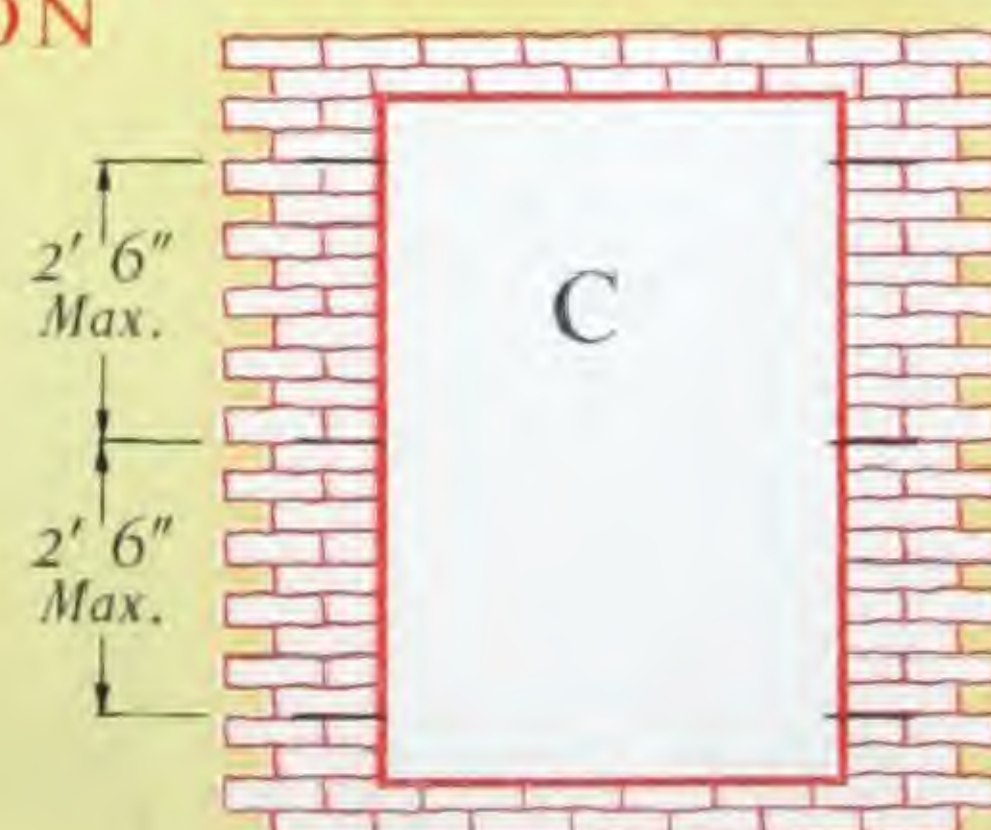
valuable where windows have to be set on the inner skin of a cavity wall, when it is obviously difficult to use the ordinary methods of cutting and plugging. The detail shown at D should be carefully followed to ensure a watertight job.



LUG IN POSITION FOR BUILDING IN



LUG WITH WINDOW & WEDGE IN POSITION



Lugs should be placed 2 courses up from cill and 2 courses down from head. Intermediate lugs should be used so that no 2 lugs are more than 2' 6" apart.

HOPE'S WINDOWS

GLAZING INSTRUCTIONS FOR

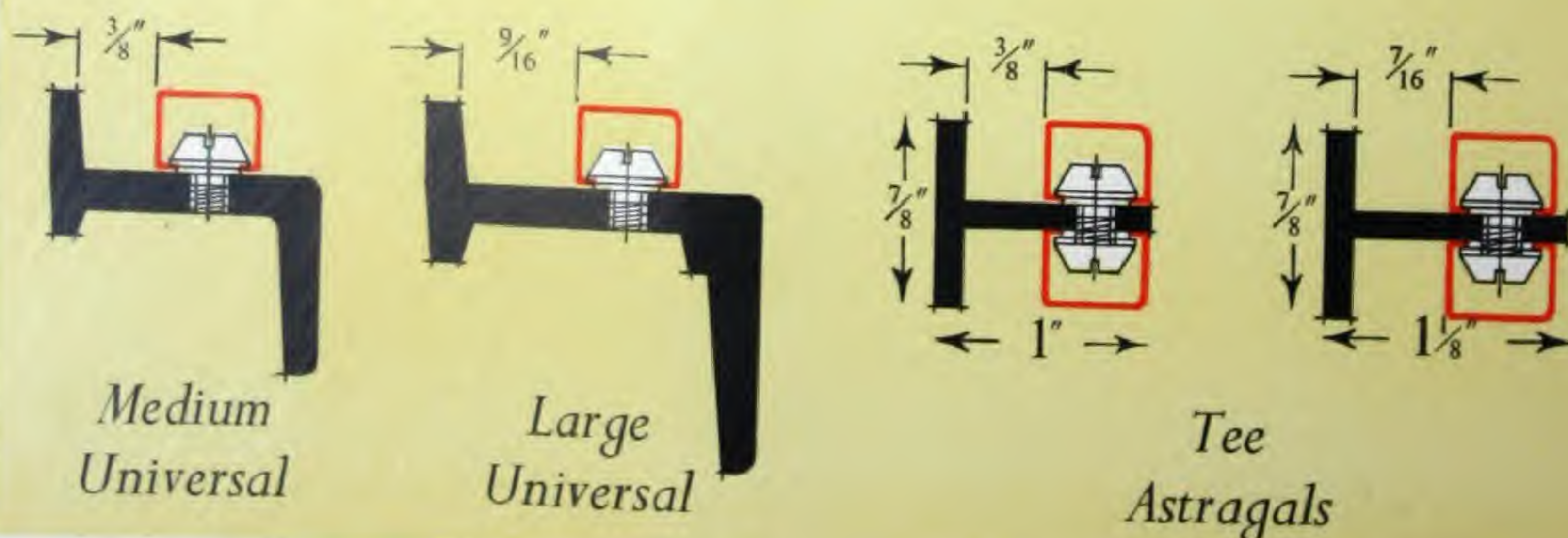
WE recommend screwless steel bead for all windows and doors which are to be glazed from inside, and particularly for those with large panes. Screwless steel bead is not drilled and screwed down to the metal window as are wood or solid steel glazing beads, but is pressed down over the heads of brass studs and 'sprung' into position. This simplified method of fitting enables windows to be glazed at a much greater speed than with wood bead. We supply screwless steel bead cut to correct sizes, complete with brass studs and radiused corner pieces; the bead is sherardized and painted one coat of red oxide paint after cutting, and holes are drilled and tapped in the window frame for the brass studs. When windows are divided into panes with tee bars the brass studs are provided with nuts for the opposite side.

Small gaps may have to be left in the bead where fittings occur, but these will always be kept to a minimum, and lengths of matching wood bead will be inserted. Screwless bead is not suitable for windows which are to be glazed from outside; nor can it be fitted to Standard Domestic types or curved work such as curved-on-plan or radiused-head windows. Where rectangular and curved panes occur together, we use screwless bead in the former and a matching wood bead in the latter.

FITTING. Providing the instructions on the opposite page are carefully followed, and particular attention paid to the 'buttering' with putty of *both the inside of the head and the rebate of the frame*, screwless bead can be fitted to HOPE'S Windows with ease, speed and confidence in its weathering qualities.

GLAZING SPACE between nib and bead for 24 oz. glass is $\frac{1}{4}$ "; for 32 oz. glass is $\frac{5}{16}$ " and for $\frac{1}{4}$ " plate is $\frac{3}{8}$ ".

MAXIMUM GLAZING space for Hope's Medium and Large Universal Sections and Tee Astragals:



HOPE'S WINDOWS

SCREWLESS STEEL BEAD


1. PUTTY INSIDE OF REBATE OF WINDOW ALL ROUND, *as detail at bottom.*

2. Press glass into position against putty, applying hand pressure all round as evenly as possible.

3. Clean off any surplus putty which may cover screw holes.

4. Screw in brass studs as far as they will go in holes provided on all four sides.

5. Fix top and bottom beads first.

6. PUTTY INSIDE FACE OF ALL BEADS  before placing in position. *This is most important.*

7. TO FIT A BEAD, place it channel down over the brass studs and press hard down until the edges of the channel are clipped under the heads of the studs.

8. Fill in any gaps at the ends of the beads with putty and apply the corner pieces.

9. Clean off all surplus putty.



HOPE'S *Window* FITTINGS

TWO-POINT HANDLE & SLIDING STAY



*Casement fitted
with HOPE'S
Two-point handle
open 1 inch for
ventilation*

Hope's Two-point Handle was patented by J. Arthur Hope in 1905, and since the patent expired has been copied throughout the world.

A perfect casement should be weather-tight when closed and made to set open for ventilation at any angle without rattling.

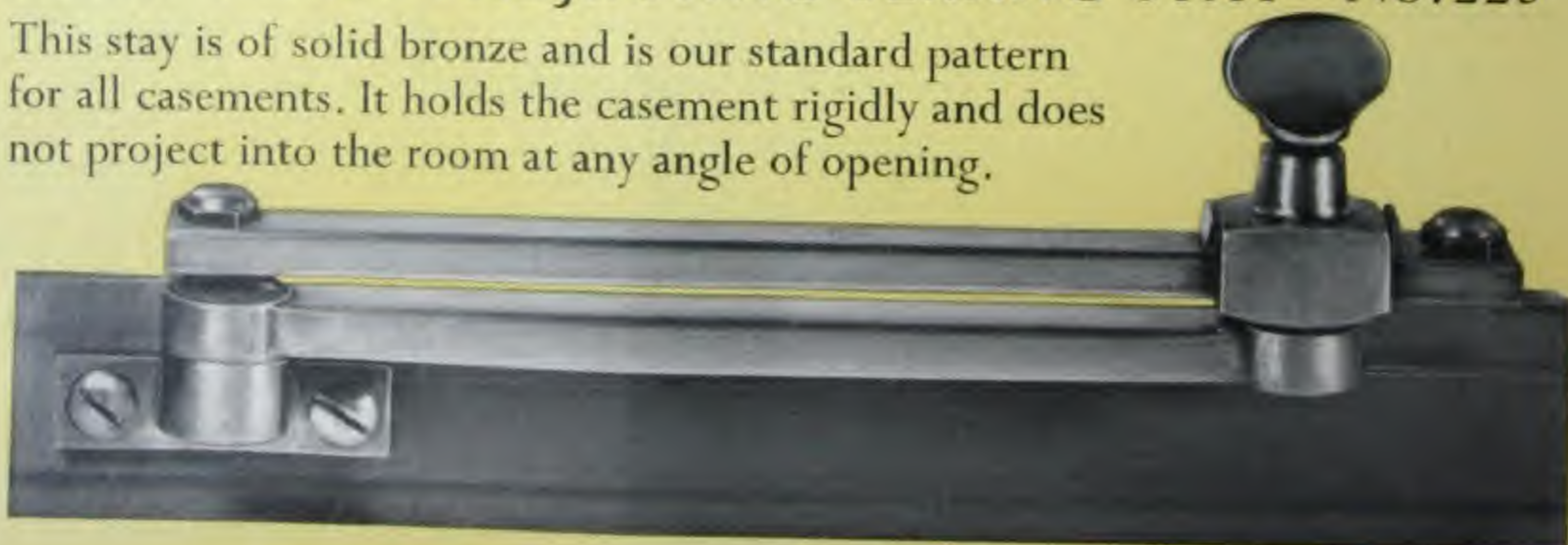
The stay should not project into the room more than $2\frac{1}{2}$ inches whether the casement is open at any angle or closed.

The combination of Hope's two-point handle and their non-projecting sliding stay provides this ideal casement perfection.

We have for many years advocated the use of side hinged casements as compared with double hung windows. Belief in the ventilating qualities of the double hung window dies hard, but if proof were needed of the superiority of a hinged window, it is supplied by the motor car manufacturers during recent years, many of whom now fit vertically pivoted non-draught ventilating windows in their cars. Anyone who wishes to test the truth of this contention has only to sit in a fast motor car and try the difference between having one of the sliding windows let down an inch or two, and closing this and opening one of the draughtproof ventilators at the side.

HOPE'S NON-PROJECTING SLIDING STAY · No. 223

This stay is of solid bronze and is our standard pattern for all casements. It holds the casement rigidly and does not project into the room at any angle of opening.



HOPE'S *Window* FITTINGS

SOLID BRONZE HANDLES



HANDLE
No. 2022



HANDLE
No. 1393



HANDLE
No. 1703



HANDLE
No. 497



HANDLE
No. 2347. *For casements glazed inside
with minimum projection over glass.
As supplied to London University.*

All Hope's casement handles are mounted on our patent system (*Pat. No. 448528/35*) which ensures that they will never 'flop' when set open. This system has been tested mechanically, covering normal use over a period of 100 years without any perceptible weakening of the tension.



CREMONE BOLT
No. 2321

HOPE'S *Door Furniture*

FOR ALTERNATIVE
PATTERNS OF
KNOB AND LEVER
FURNITURE SEE
OUR HARDWARE
CATALOGUE
No. 204



Bronze Lever Handle and
Lock as fitted to Standard
Doors.
This Lock cannot be suited.



Concealed bronze
Bolt No. 2674 for
use on left-hand leaf
of double doors.



Locking Cremone Bolt
No. 2471, specially
recommended for ex-
posed positions.



Bronze Knob No. 2049 and
Lock No. 22001.



Bronze Lever Handle No. 2524
and Lock No. 22001.

HOPE'S *Swing Doors*

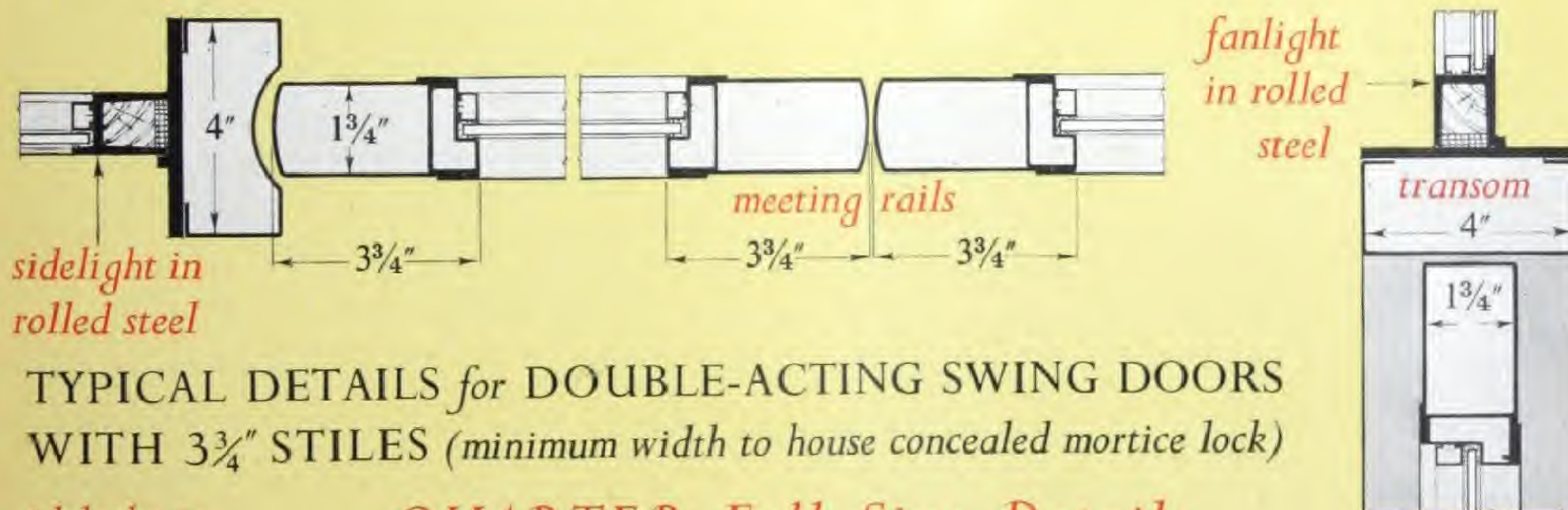


Canteen for West Midlands Gas Board

S. N. Cooke, F.R.I.B.A., Architect

HOPE'S SWING DOORS are made of 16 gauge zinc-coated pressed steel to customer's sizes. This construction provides requisite space for housing top and bottom shoes and pivots, and combines great strength with a fine smooth finish.

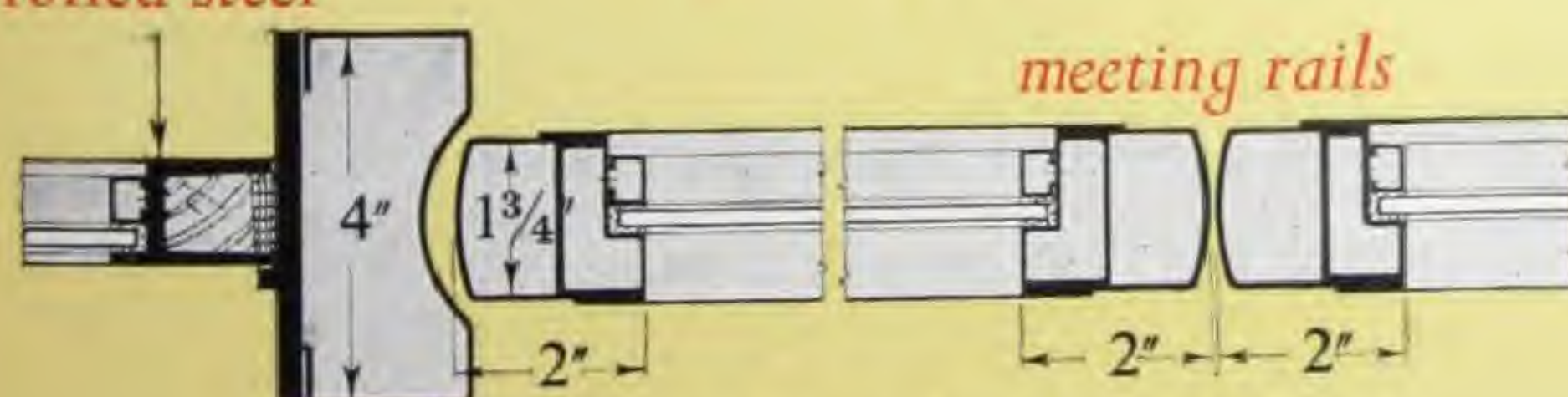
Adjoining fixed portions may be made to match, as photograph above, or they may be of rolled steel construction, as detailed below.



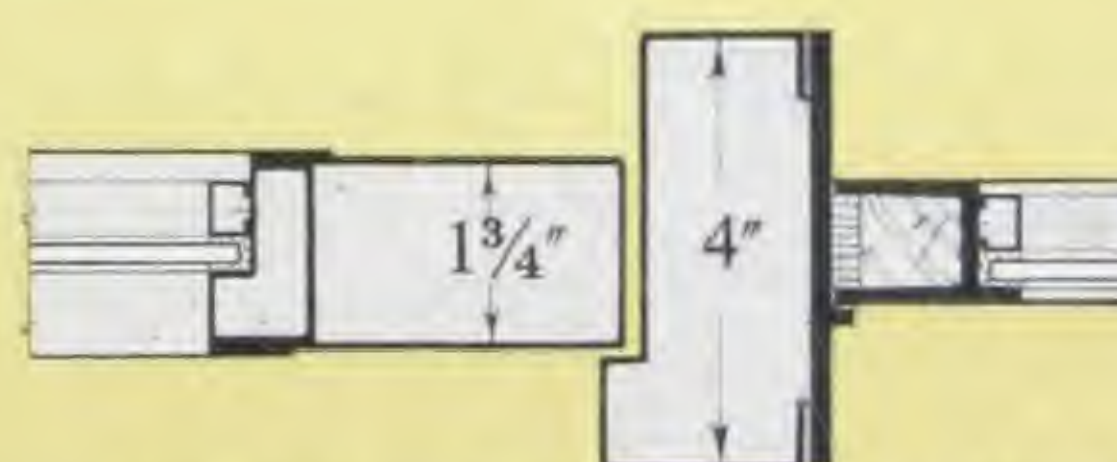
TYPICAL DETAILS for DOUBLE-ACTING SWING DOORS WITH 3 3/4" STILES (minimum width to house concealed mortice lock)

sidelight in rolled steel

QUARTER Full Size Details



ALTERNATIVE with 2" STILES (lock must be housed between lock rails)



ALTERNATIVE REBATED FRAME for SINGLE-ACTION FLOOR SPRINGS

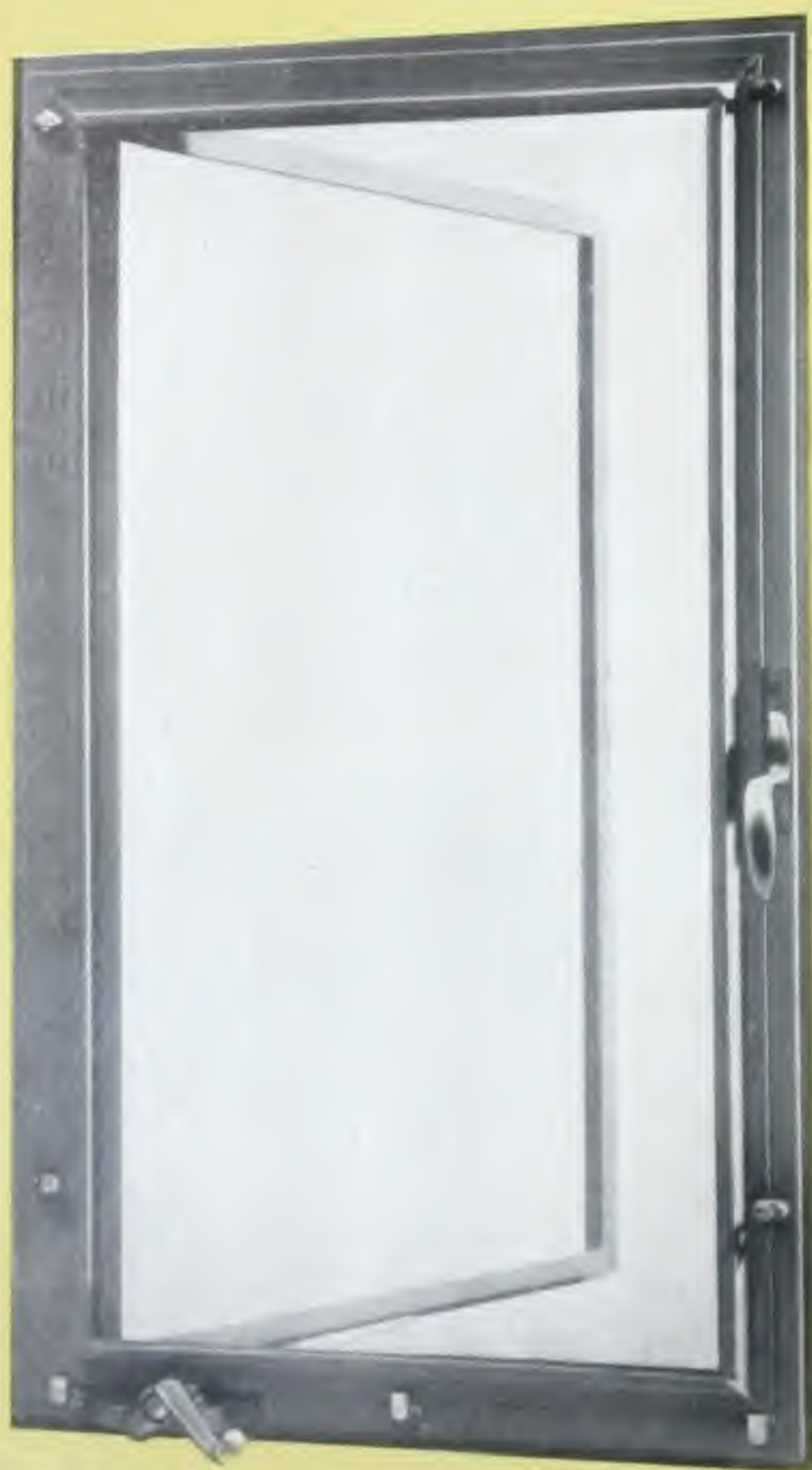
HOPE'S FLYSCREENS

FOR SIDE-HUNG CASEMENTS

There is very little demand in Great Britain for flyscreens except in larders and kitchens: in these rooms it can often be arranged for the casements to open inwards, and all that is needed is a removable screen buttoned to the outside of the window frame.

In some foreign countries, however, it is desirable to fit flyscreens to a whole building, and for many reasons—appearance, ease of removal, curtains, etc.—internal screens are preferred.

For this condition we have developed a 'thru-the-screen' operator which is extensively used in the U.S.A. and Canada and permits the casement to be opened and closed without disturbing the flyscreen.



HALF
Full Size
Details



Side-hung casement opening outwards fitted with HOPE'S bronze 'thru-the-screen' operator No. A/90 and bronze fastener No. 2793. Suitable for side-hung casements up to 5 ft. in height and 2 ft. 3 in. in width.

A simple 'thru-the-screen' operator can also be supplied for small top-hung ventilators not exceeding 2 ft. high or 2 ft. wide.

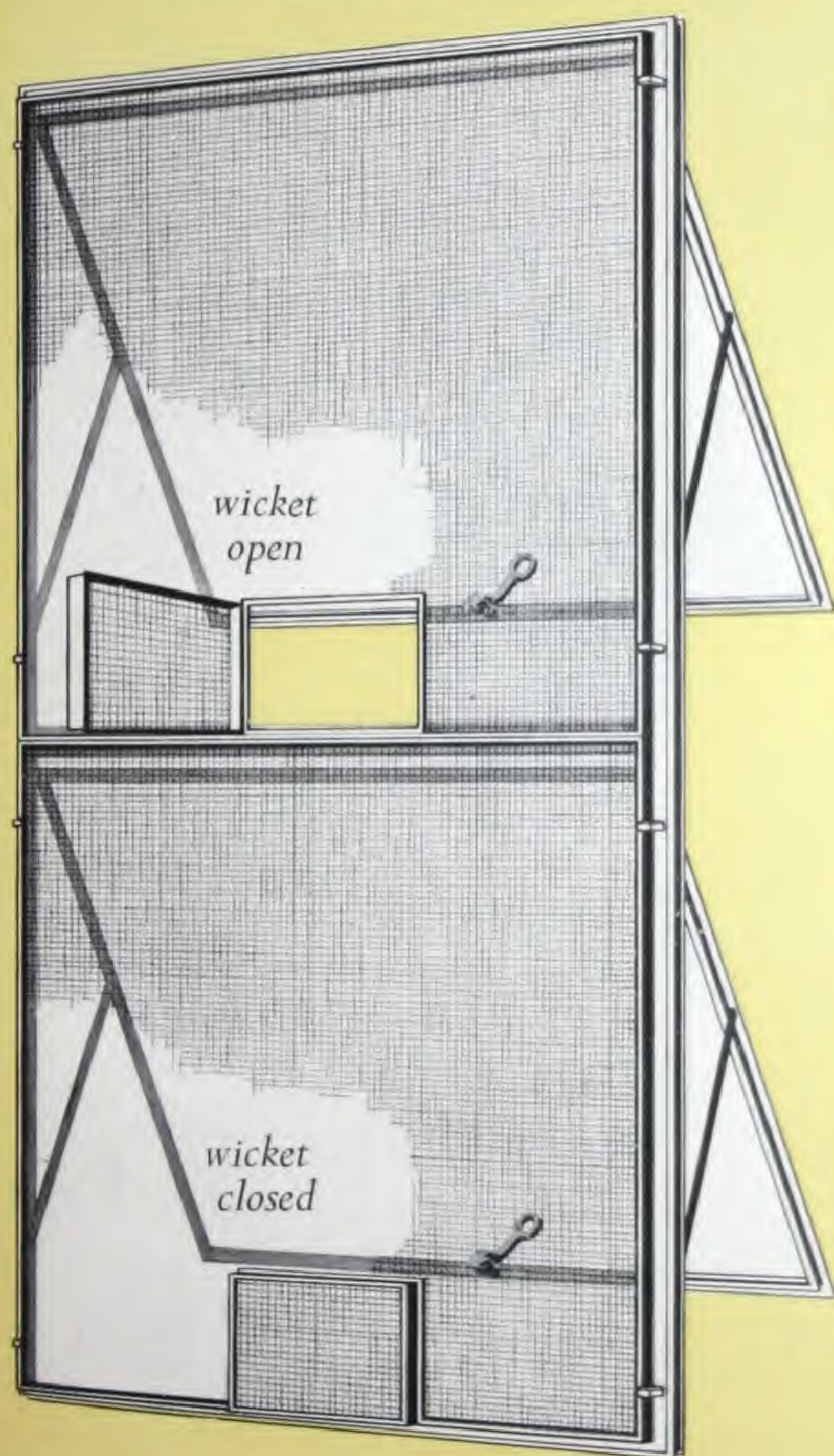
HOPE'S FLYSCREENS

FOR COMPOSITE WINDOWS

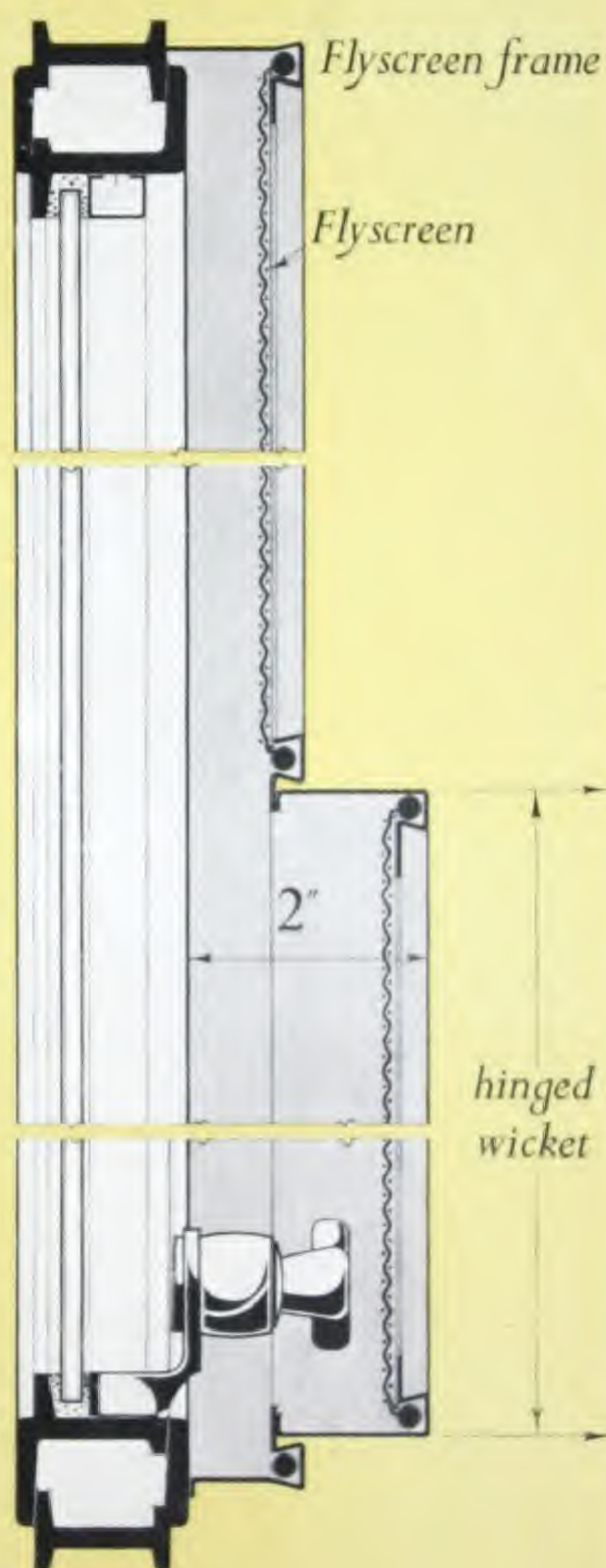
The provision of flyscreens for large composite windows, e.g. in Classrooms or Hospital wards, presents many difficulties.

Pivoted ventilators cannot be screened, and hinged top-hung ventilators (*except in very small sizes*) are unsatisfactory, as the normal fittings—cam opener or peg stays—invariably damage the wire mesh.

We recommend the use of Projected Casements (see page 20) which stay open at any desired angle and are fitted with a special flattened bronze handle, reached through a hinged wicket in the screen.



HALF
Full Size
Details



Screens. We strongly advise flyscreens should be made of rustless metal, and unless otherwise instructed we supply monel metal or tinned copper screens in hot-dip galvanized steel frames.

HOPE'S

Steel Sub-frames

The use of sub-frames for metal windows is of comparatively recent introduction. We had for some years been impressed with the damage suffered by windows, built in or fixed before the departure of the rougher trades, and particularly with a cement finish on the outside. With the use of sub-frames damage can be avoided; they are delivered for the contractor to build in, and form templates for the window openings. As plastering is finished and the rougher trades out of the way the windows can be fixed and glazed floor by floor in clean conditions without loss of time.

The Architects for the Shell-Mex Building (Messrs. Joseph) accepted our suggestions in 1930 and this large contract demonstrated the advantages of sub-frames very effectively. Since that date, the use of sub-frames has become a widely accepted practice.

Profiles Pressed steel affords a large variety of shapes, and the details on the opposite page illustrate a design which is in common use for normal brick or stone construction with a plaster finish inside.

The sections may be larger or smaller and the thickness of the material may be increased, while accommodation can be provided for shutters, brisé-soleil, curtain rails and operating gear.

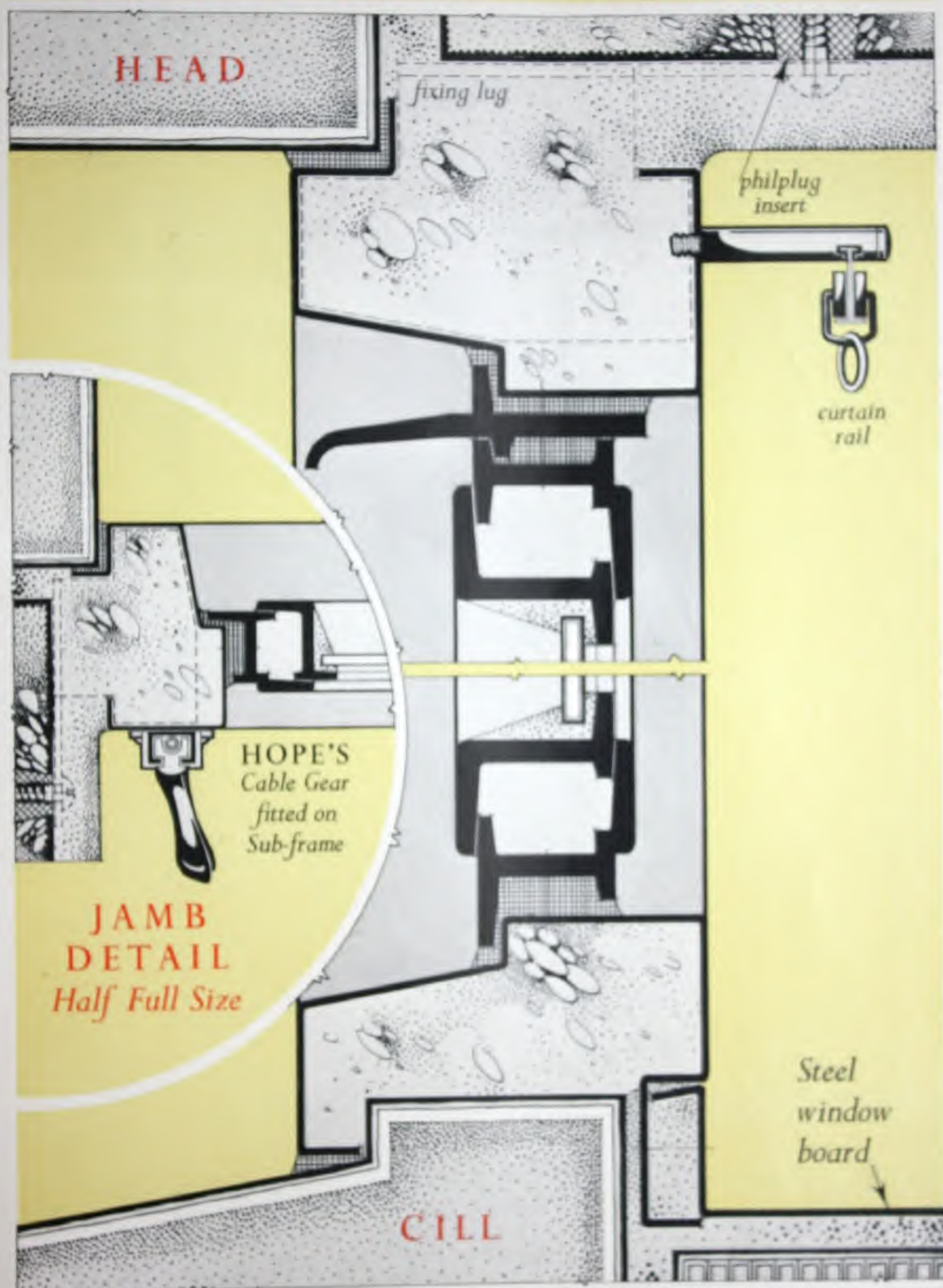
Mullions, transoms and window boards can be introduced. Illustrations will be found on pages 74 to 85 showing the use of sub-frames as 'cladding' for modern steel construction and on page 63 for double windows for soundproofing. They can also be made of large profile and great strength as for Power Stations and provide a secondary part of the construction of the building.

Fixing. In fixing, sub-frames should be well grouted so as to make a solid connection with the walls. For very high windows for Power Stations etc., struts are provided at intervals to prevent bulging of the frames during building in.

HOPE'S Steel Sub-frames are usually made in 14 g. (.078" thick) but thicker material up to $\frac{1}{8}$ " may be used.

HOPE'S *Steel Sub-frames*

TYPICAL FULL SIZE DETAILS



HOPE'S

Sound-Resisting Windows

The noise of traffic in busy streets is a serious problem, but badly affected buildings can be made habitable by the application of well-fitting double metal windows.

Many of the large installations which we have carried out are provided with an air conditioning plant and if this is done the windows can be kept closed with comfort.

We have supplied double windows on many important buildings and notably those illustrated in the next few pages.

We advise the use of two windows, each rigidly secured to the structure. These windows must be of robust construction, a thoroughly good fit and provided with first-class hardware which will keep them tightly closed. The plan generally consists of providing an ordinary outward opening or pivoted casement on the outside and inward opening casements on the inside for access for cleaning.



QUEEN'S HOTEL, LEEDS

*W. Curtis Green, R.A., Son & Lloyd, Architects
associate with W. H. Hamlyn, F.R.I.B.A., Architect to the L.M.S.*



A BEDROOM WINDOW IN THE QUEEN'S HOTEL, LEEDS

'With these windows open the noise was terrific. When closed the transformation was remarkable. There was but a faint purr from outside, and to see the trams and buses go by was like viewing an old-time silent film.'

Extract from 'The Yorkshire Post'



SAVOY HOTEL, LONDON



BERKELEY HOTEL, PICCADILLY

These two hotels, originally built with single windows, have been entirely refitted with our double sound-resisting windows.



SOUTH AFRICA HOUSE, LONDON

Sir Herbert Baker, R.A., and Alex T. Scott, F.R.I.B.A., Architects

The illustration shows one of the double sound-resisting bronze windows overlooking Trafalgar Square.

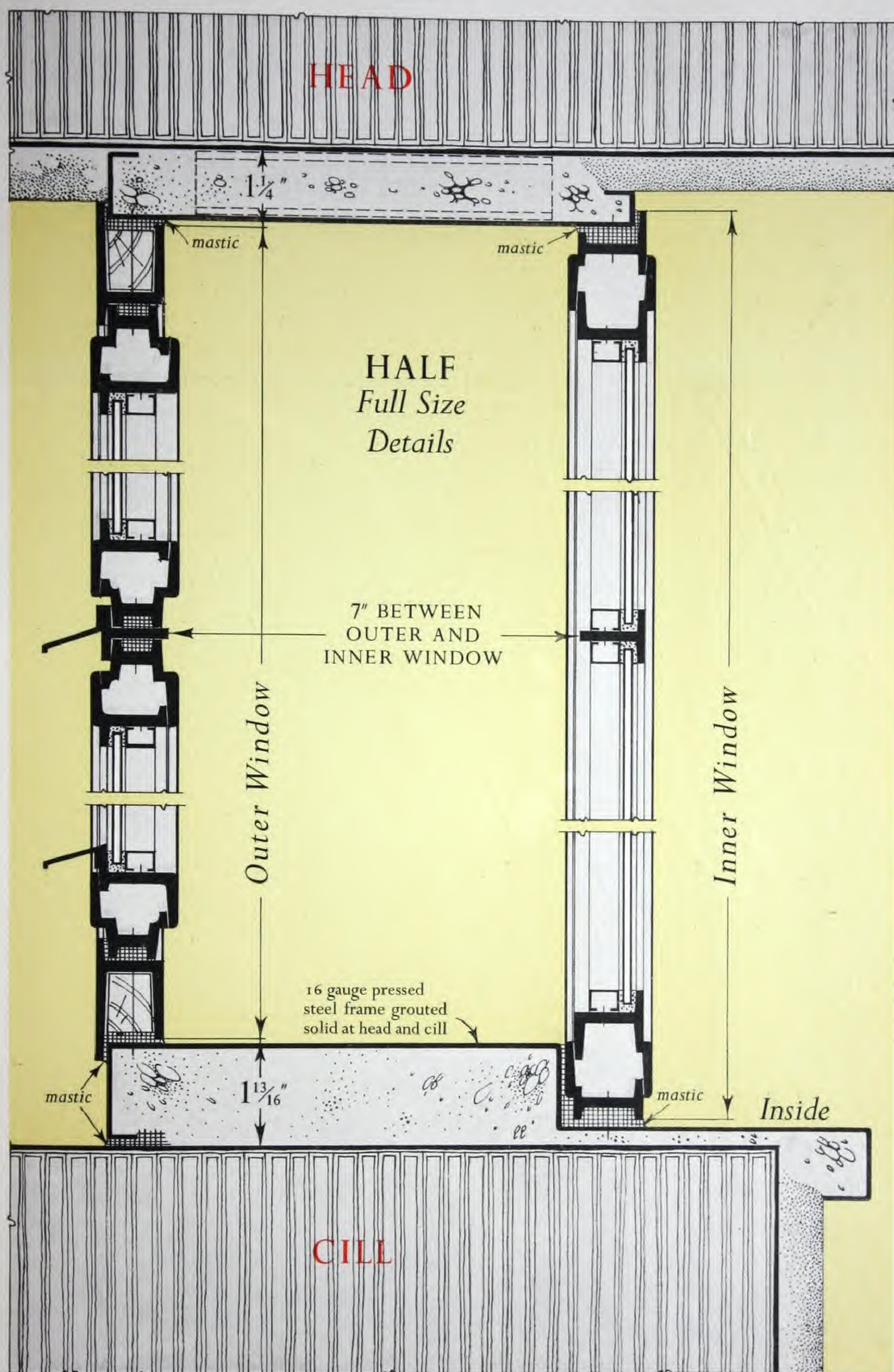
'You could almost hear a diamond drop.'

The late Lord Castlerosse in the 'Sunday Express'

HOPE'S *Sound-Resisting* WINDOWS *in Sub-frames*



Directors' Offices
GUEST, KEEN & NETTLEFOLDS LTD., Birmingham



HOPE'S

Bronze Windows

We strongly recommend the use of bronze for monumental buildings and, indeed, for any first-class permanent structure.

We use a manganese bronze of approximately 57% copper, 1 to 2% manganese, the balance being of zinc with a small inclusion of lead and tin. This alloy is extruded accurately to the required profiles. It is a good metal with the requisite stiffness for window manufacture, while the colour is pleasant and tones with time. We believe it to be practically everlasting. Stiffness is of great importance for side hung and pivoted casements to withstand torsional stress.

We illustrate on pages 66, 67 and 68 the complete range of universal sections for window manufacture. The extrusion process permits a great variety of design and special profiles can be produced at comparatively small expense.

The doors for the Garden Court at the Bank of England, one of which appears in the photograph opposite, are good examples of what can be done with extruded bronze. The profiles for these doors are similar to our heavy section, illustrated on page 68, but of larger area and thicker metal.



CASTLE DROGO, DEVON

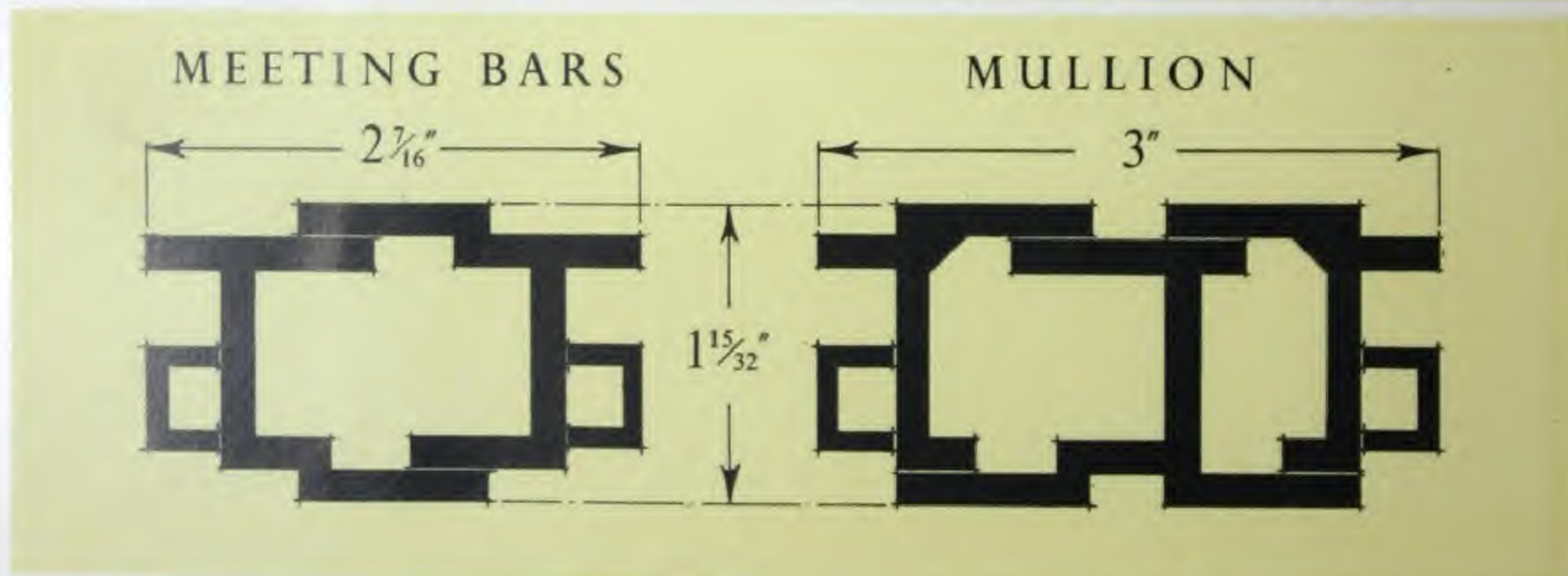
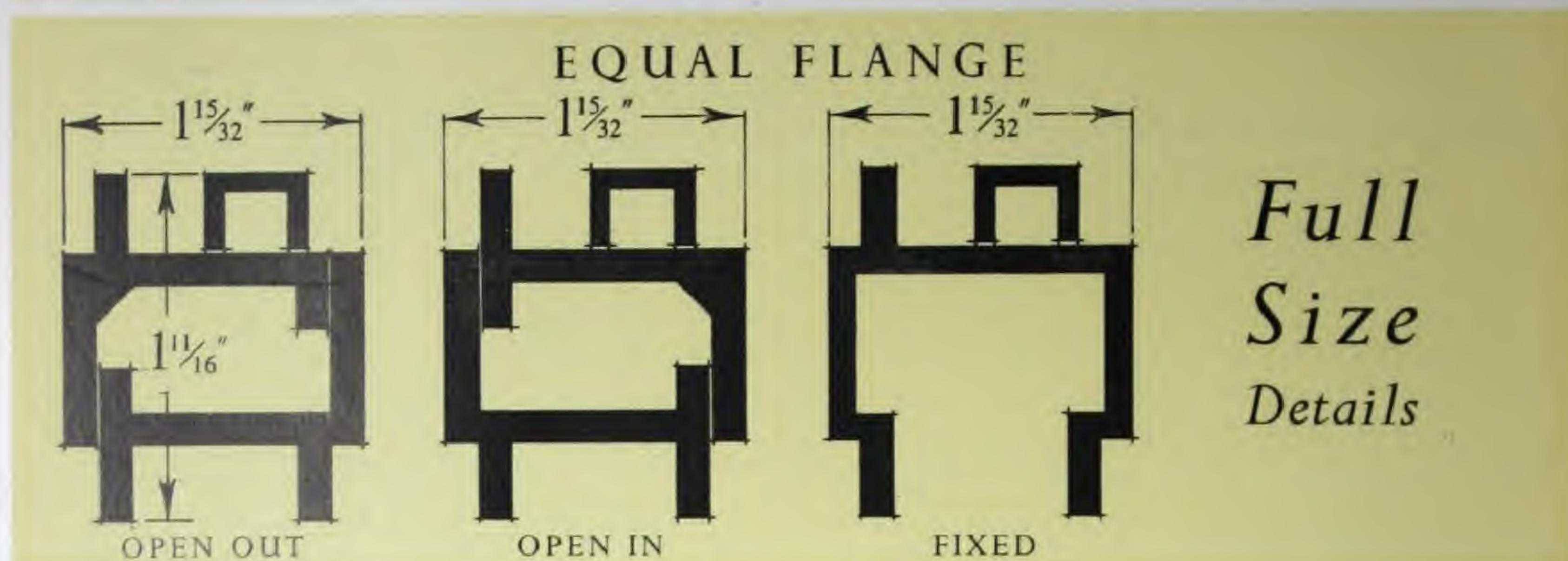
Sir Edwin Lutyens, O.M., K.C.I.E., P.R.A., Architect



GARDEN COURT, BANK OF ENGLAND
Sir Herbert Baker, R.A., and Alex T. Scott, F.R.I.B.A., Architects

BRONZE SECTIONS

NUMBER 2



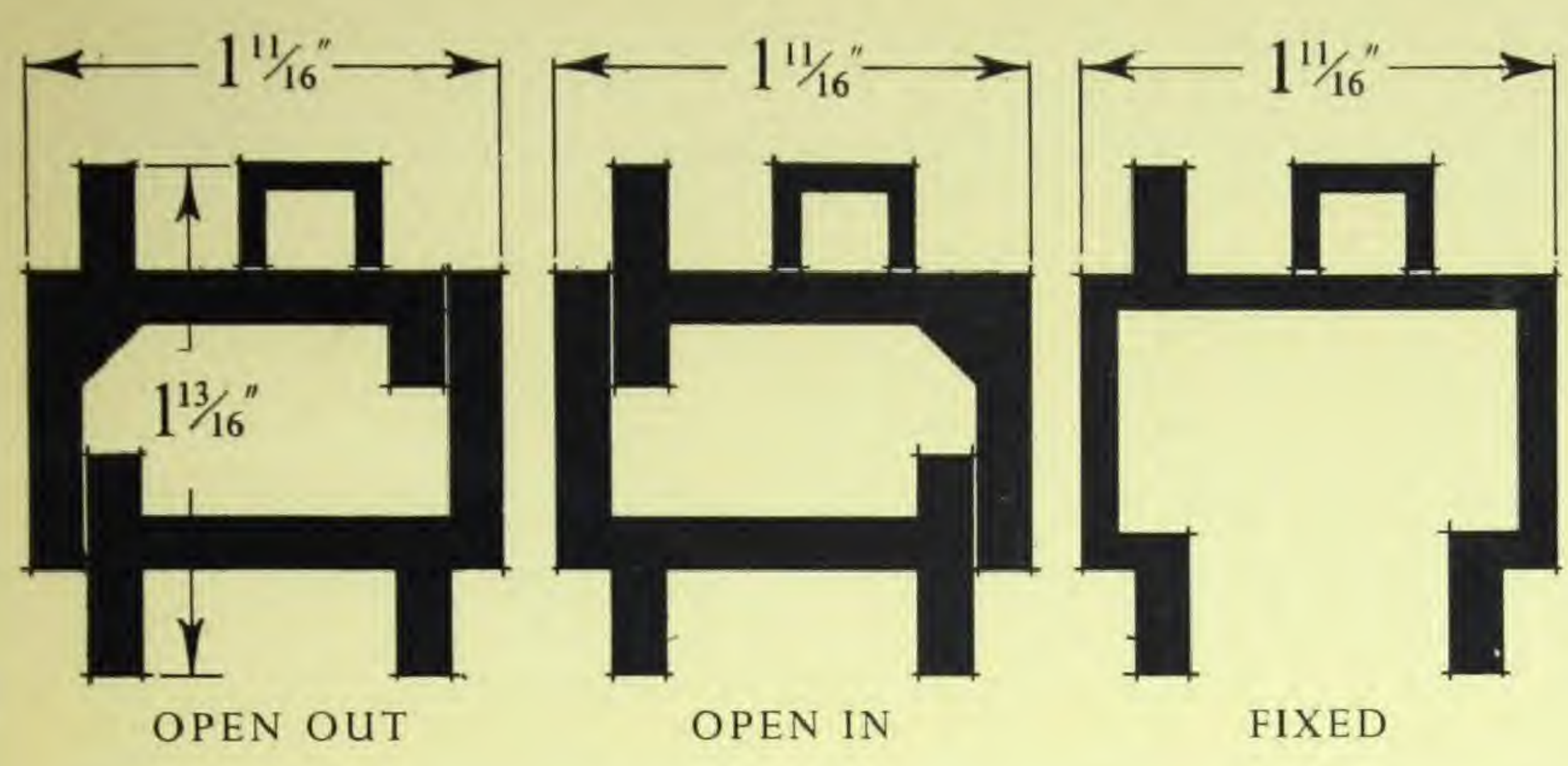
The sections on this and on pages 67 and 68, illustrate a full range of universal sections for casement manufacture.

We have a large number of other sections for special windows and we are always willing to provide detailed drawings for any window problem.

BRONZE SECTIONS

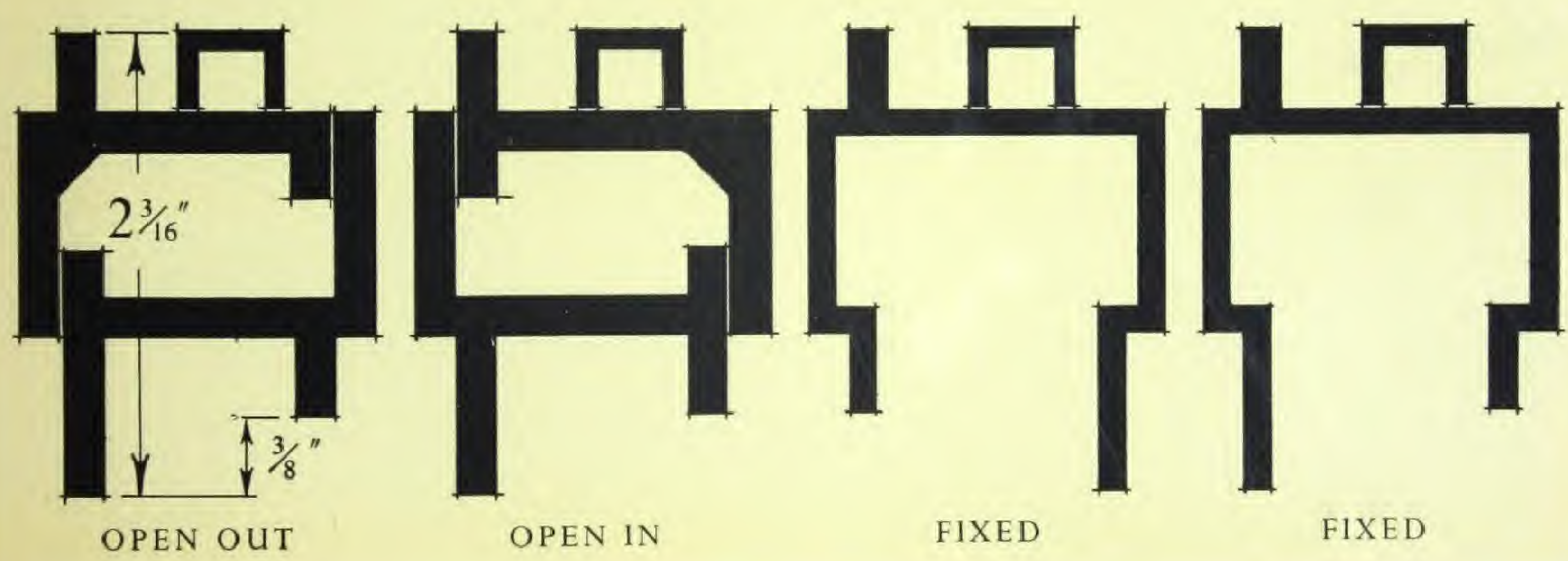
NUMBER 3

EQUAL FLANGE

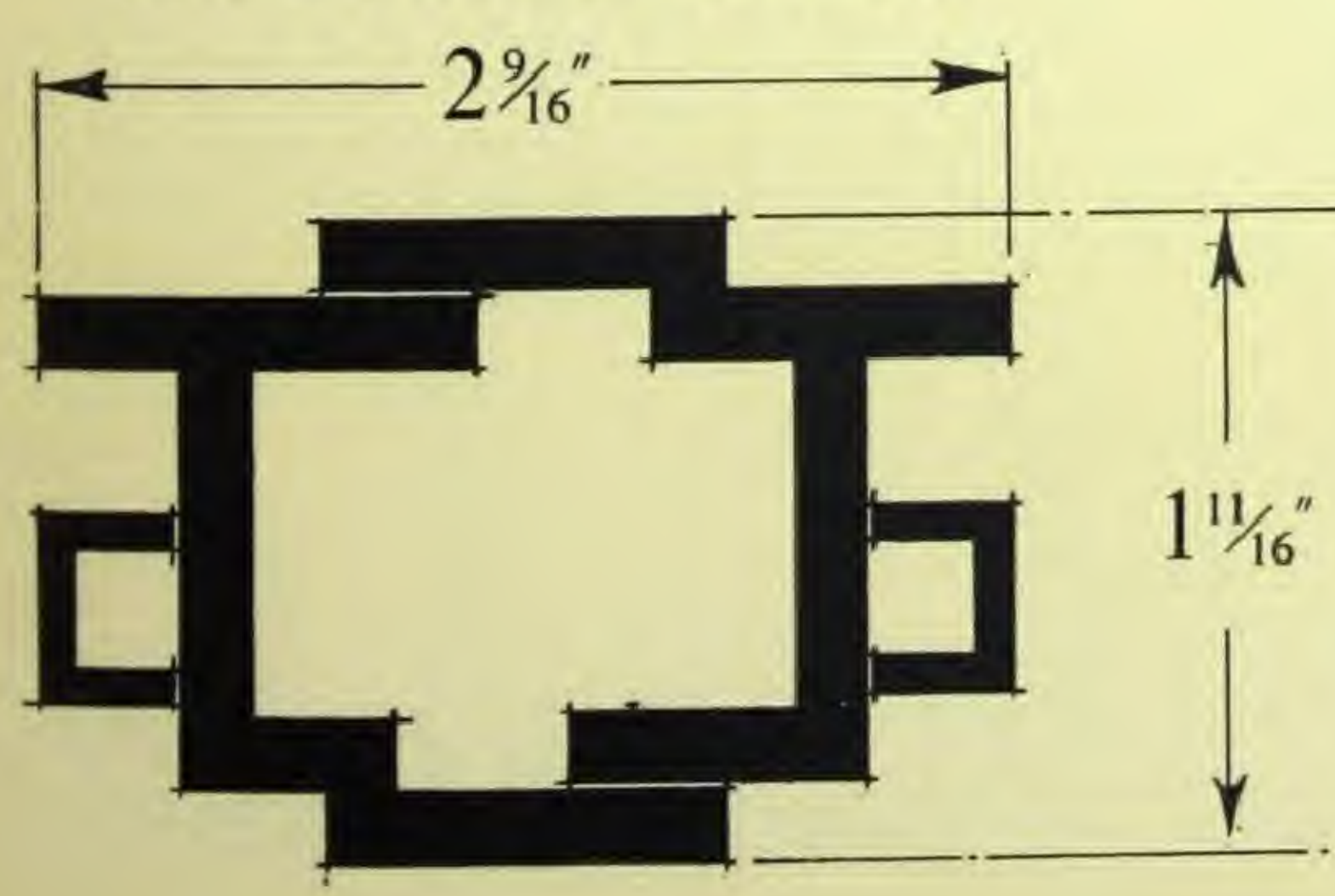


*Full
Size
Details*

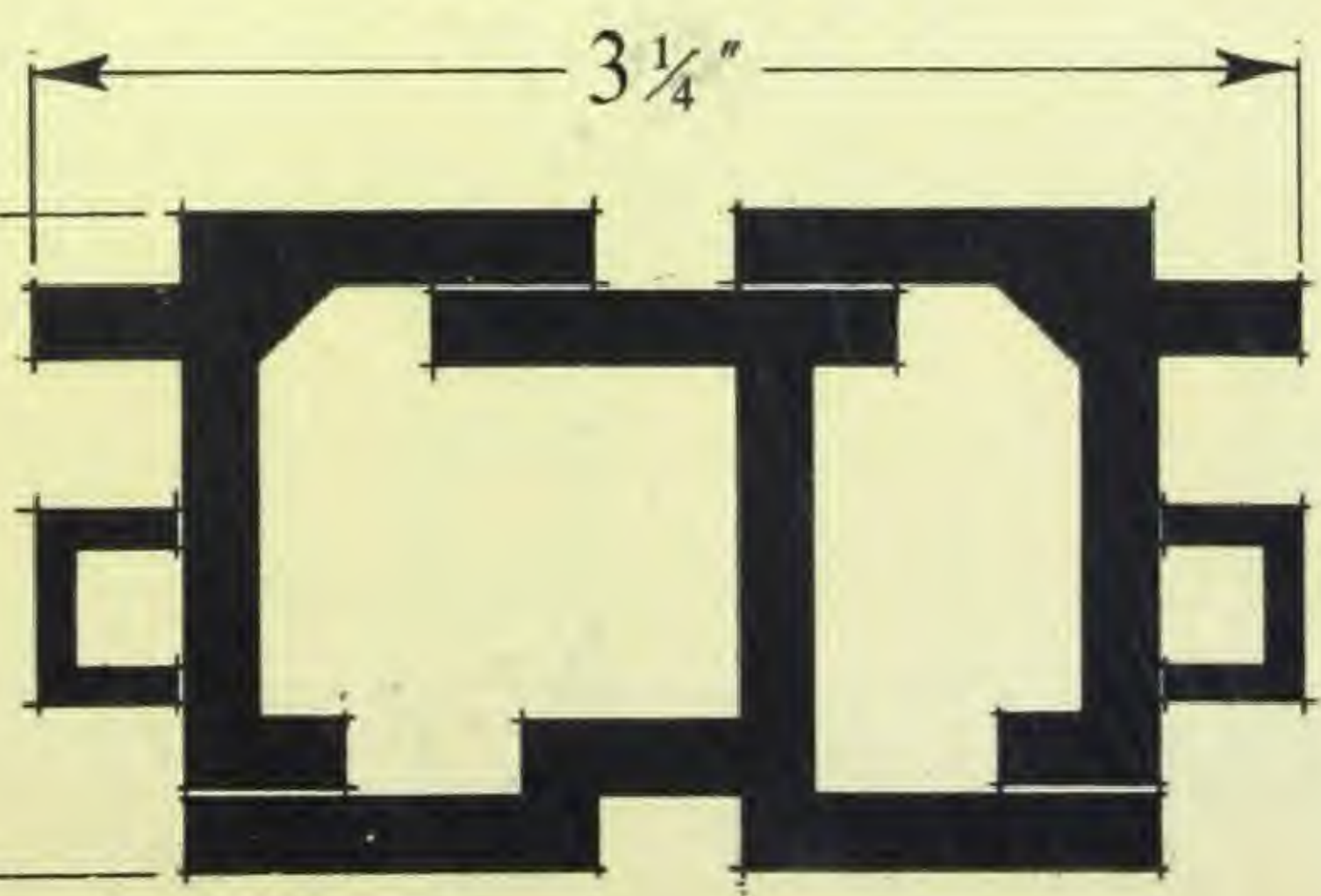
WIDE FLANGE



MEETING BARS



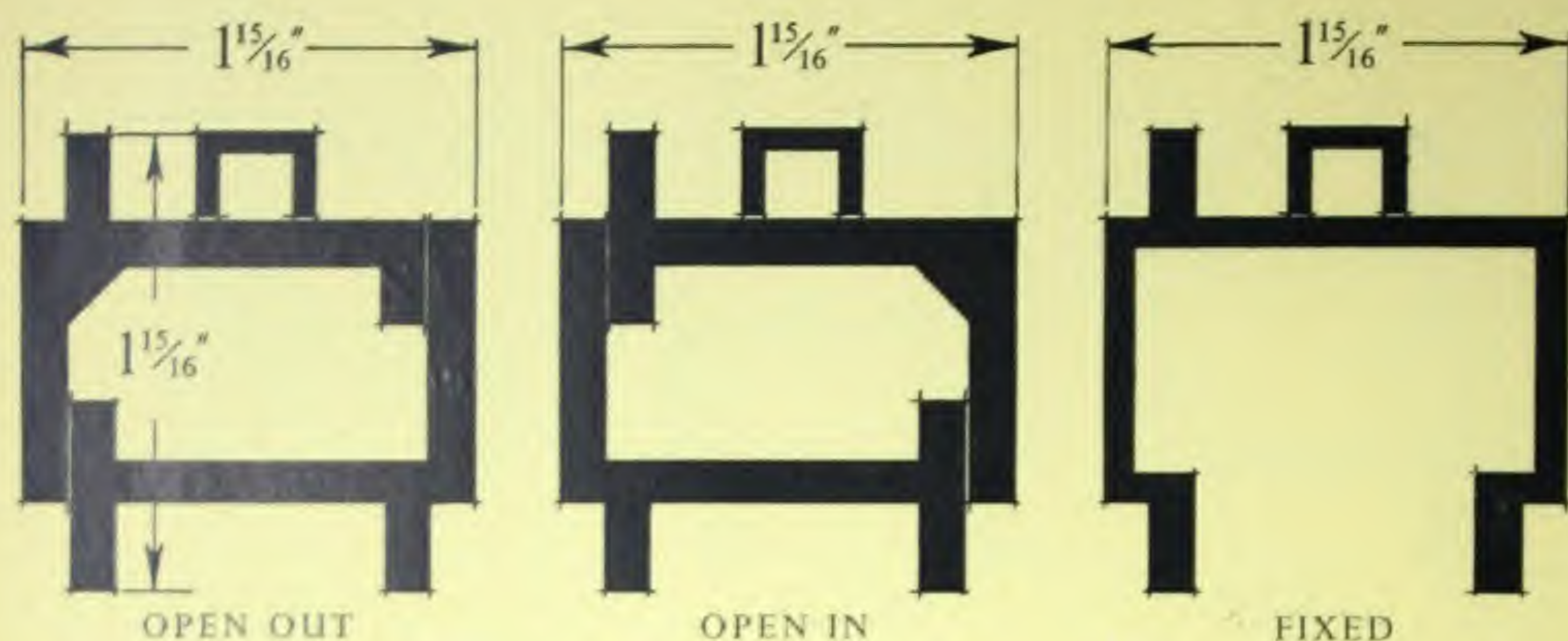
MULLION



BRONZE SECTIONS

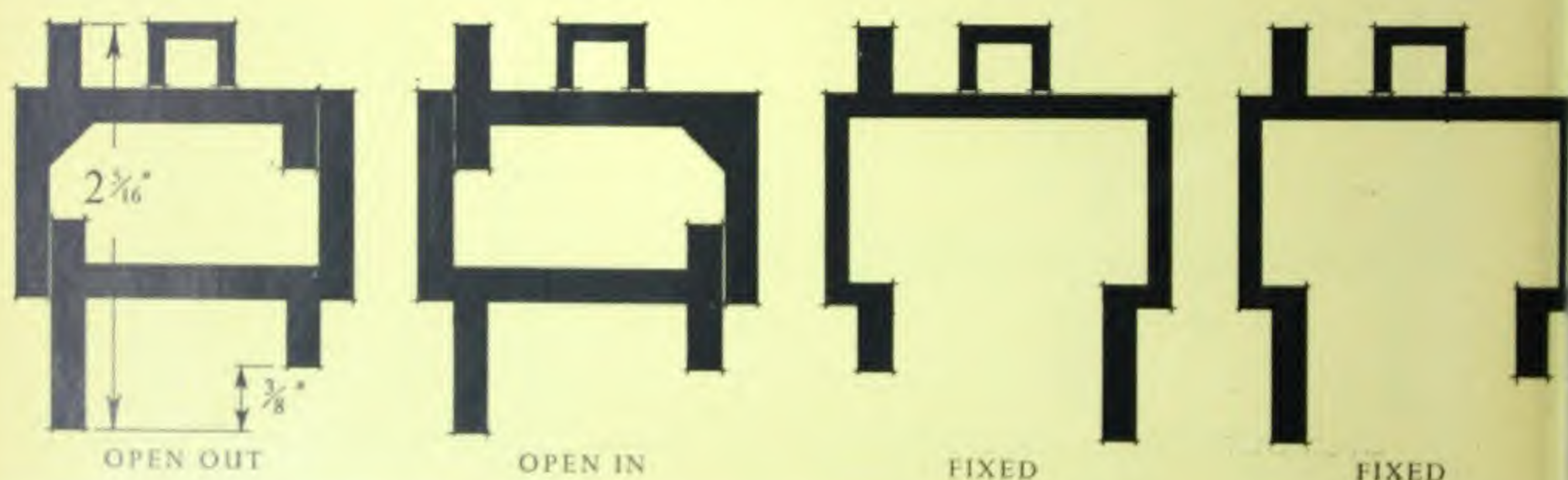
NUMBER 4

EQUAL FLANGE

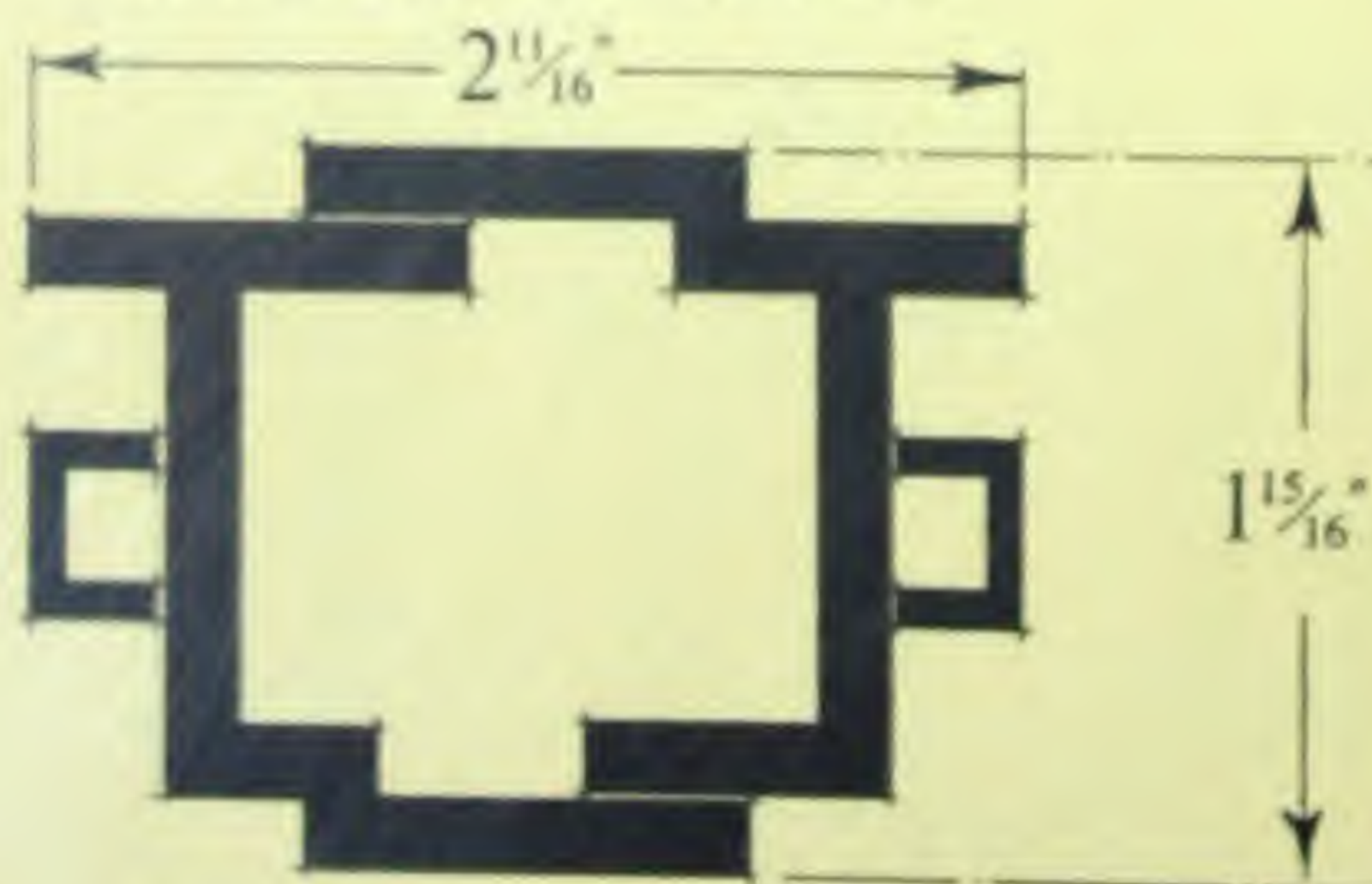


*Full
Size
Details*

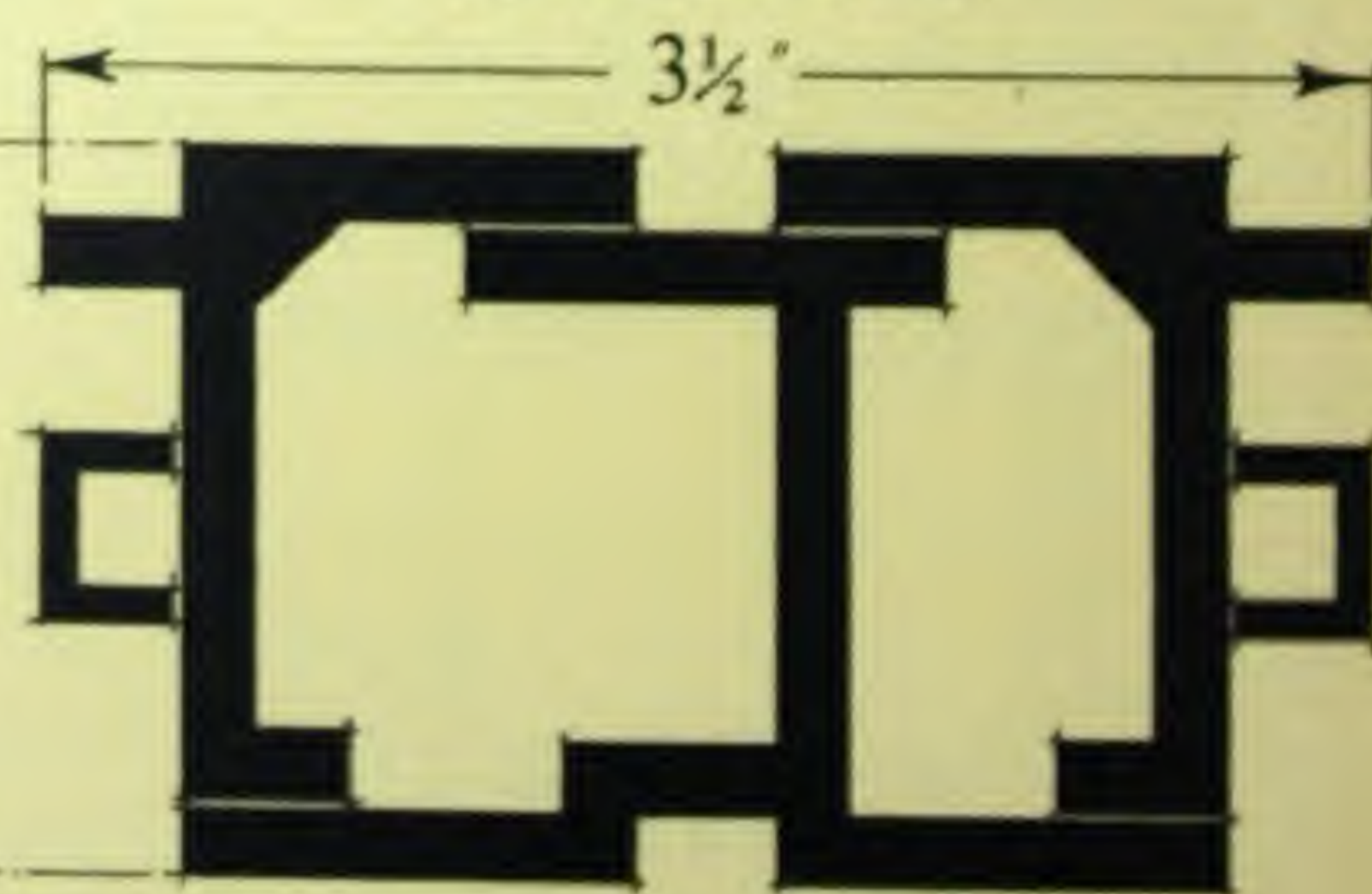
WIDE FLANGE



MEETING BARS



MULLION





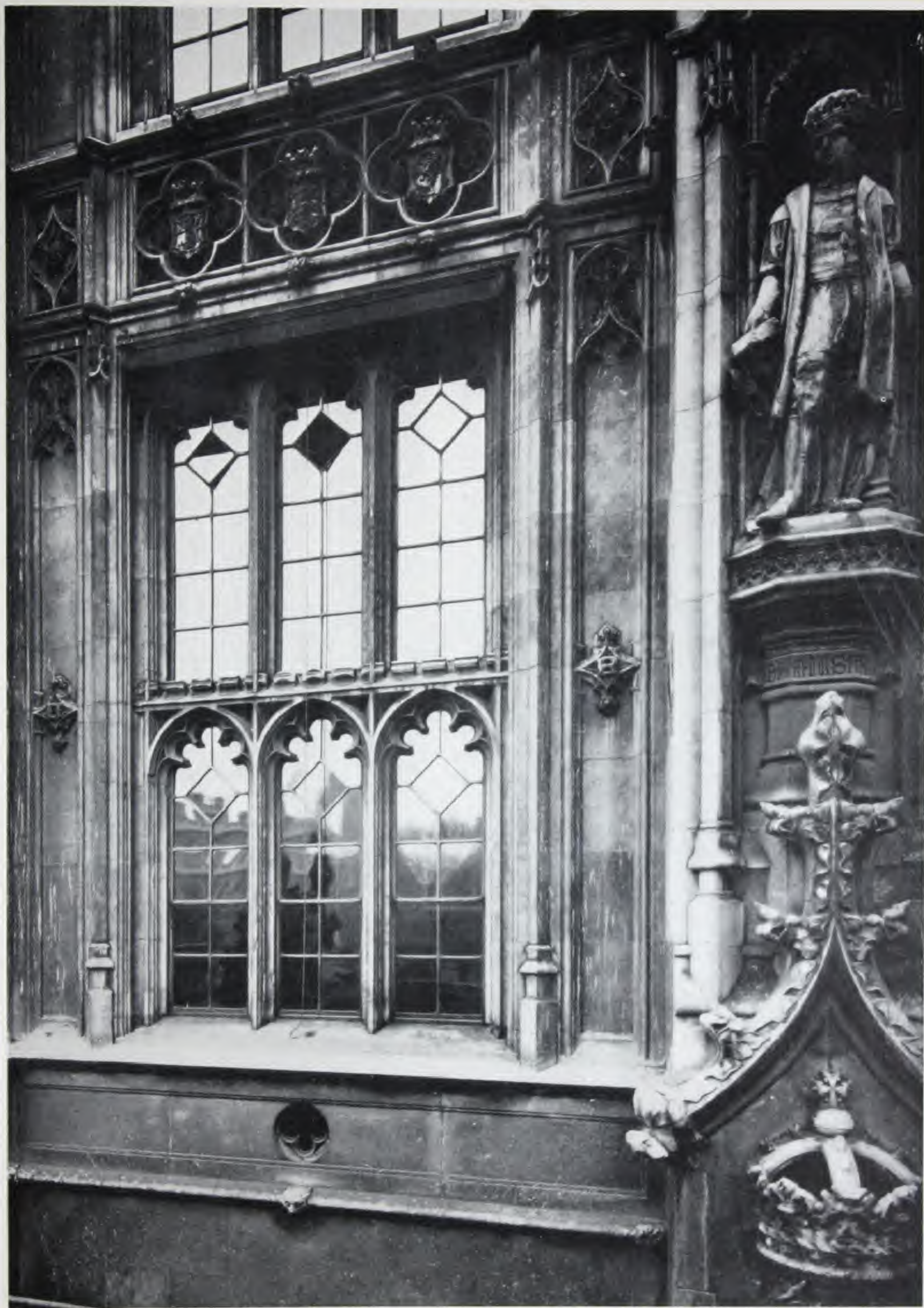
MIDLAND BANK HEADQUARTERS, LONDON
Sir Edwin Lutyens, O.M., K.C.I.E., P.R.A., and Laurence M. Gotch, F.R.I.B.A.



SOUTH AFRICA HOUSE, LONDON
Sir Herbert Baker, R.A., and Alex. T. Scott, F.R.I.B.A., Architects



PALACE OF CONGRESS, HAVANA
Eugenio Rayneri, Architect



HOPE'S Bronze Windows were supplied to the Houses of Parliament when they were built in 1847 to Sir Charles Barry's design.



A large bronze window photographed in our Works, made for
THE BANKERS CLEARING HOUSE, LONDON
Whinney, Son and Austen Hall, Architects

School Windows

*We have set out
on the following pages 74 to 85
some types now in general use*

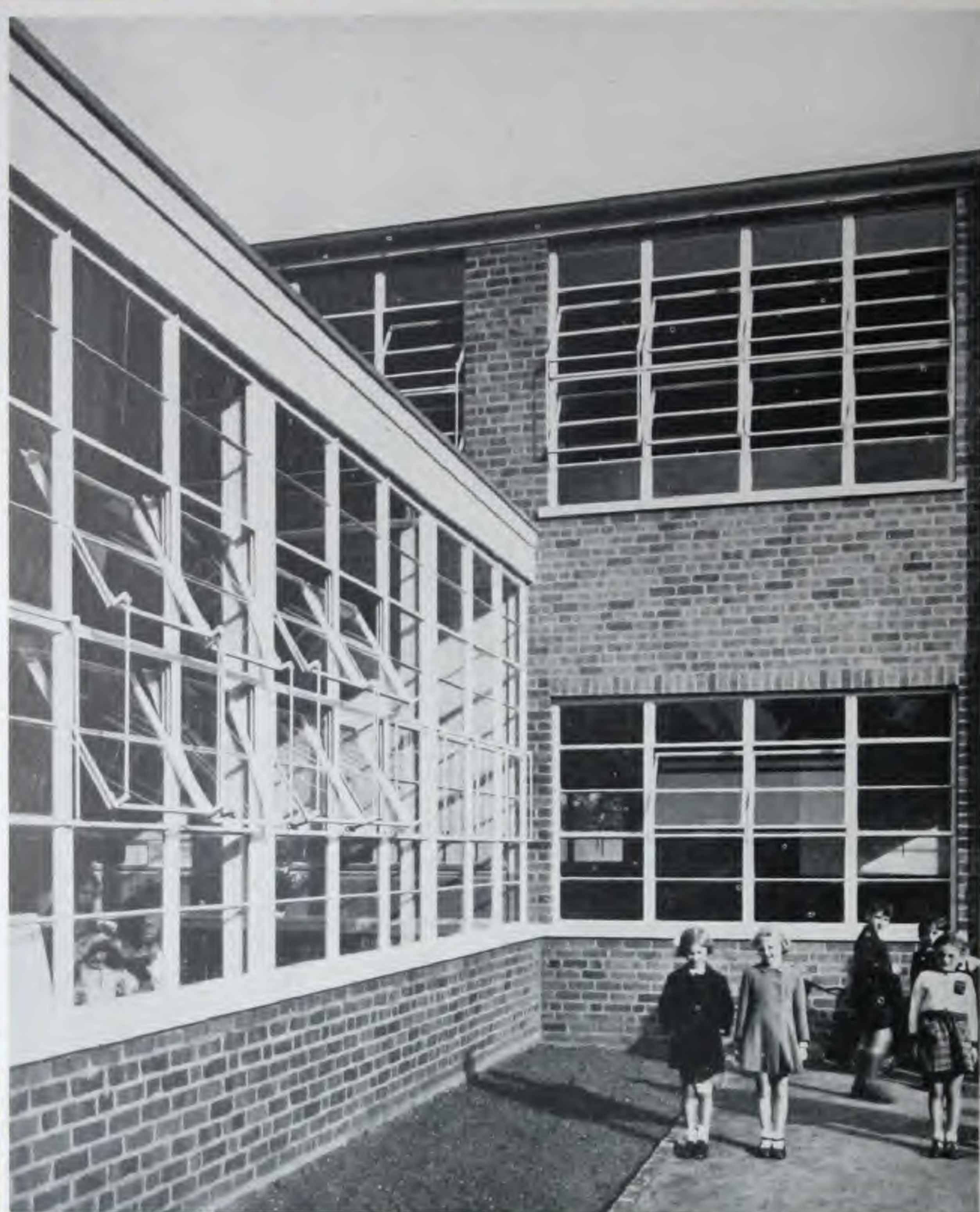
All these are suitable for ground floor use, but for schools of two or more floors, we advise the 'Adelphi' type (pages 84 and 85) because these not only provide for a wide range of ventilation but they can be cleaned with safety from inside. It will be noticed that nearly all the details are of steel framed construction with pressed metal claddings to clothe the structural steelwork. For more conventional building details see pages 38 to 45.



Bedford Drive School, Birkenhead

Architects: Willink & Dodd, M.A., F.R.I.B.A.

The Cherry Orchard Window

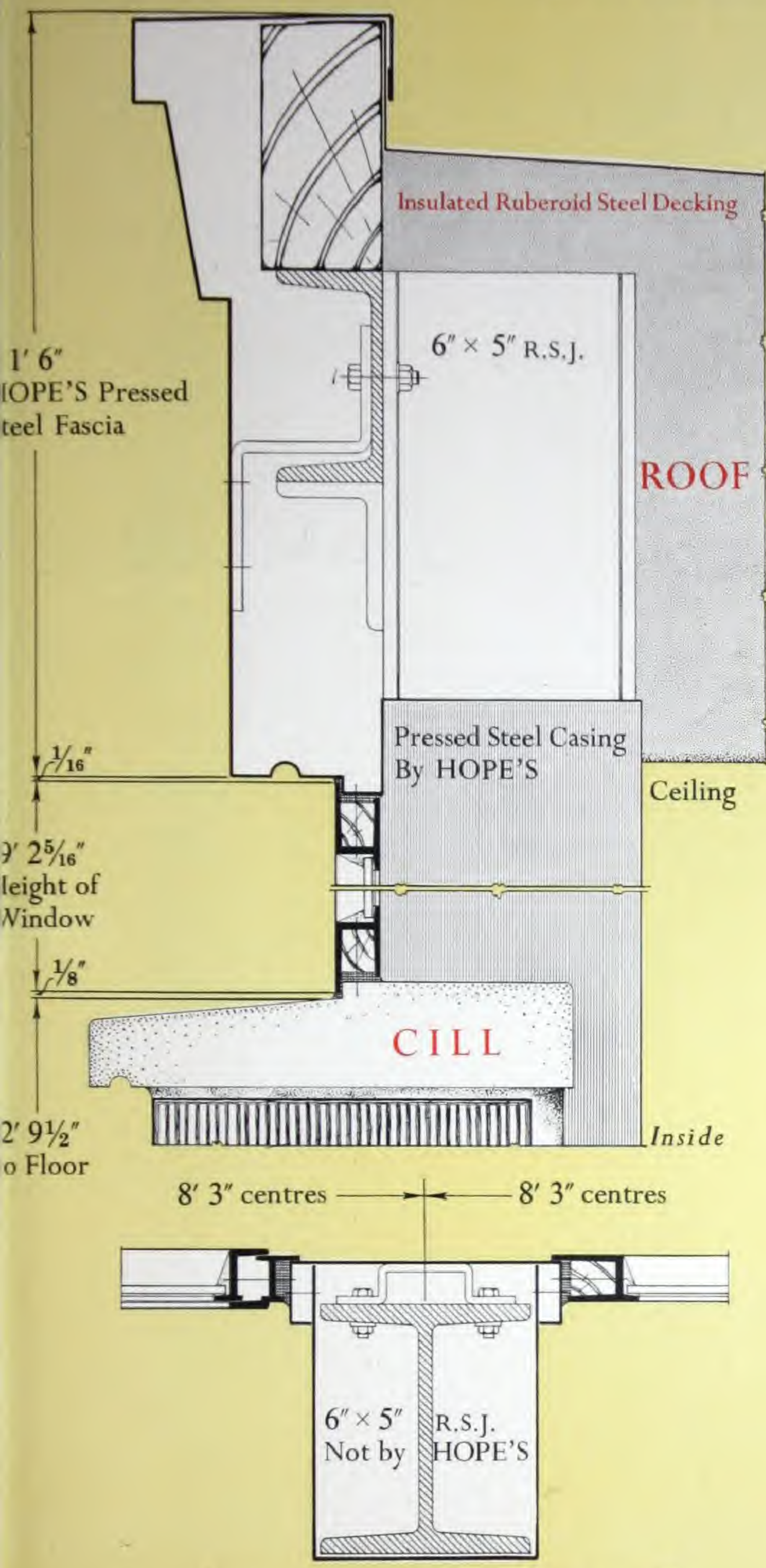


CHERRY ORCHARD ROAD SCHOOL
for the City of Birmingham Education Committee
Architect: W. T. Benslyn, A.R.C.A., F.R.I.B.A.

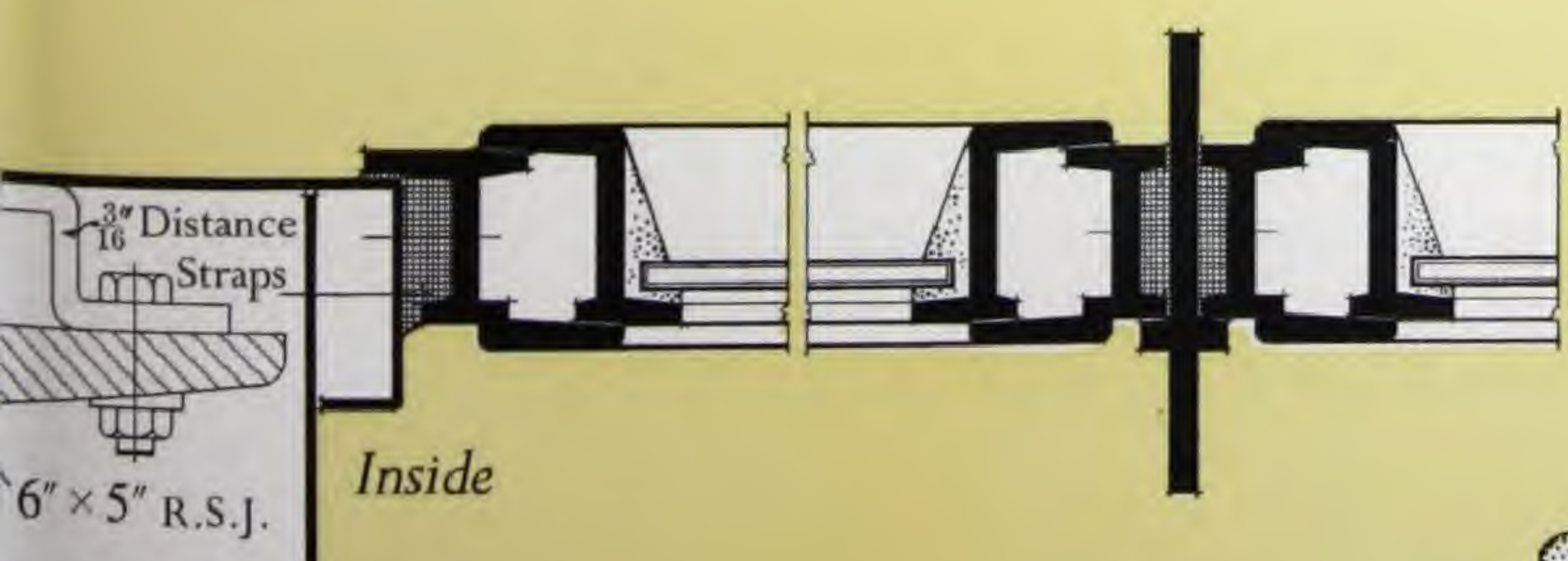
The Cherry Orchard Window is divided into 3 units in the width of 8' 3". Ventilation is by two rows of swings, 6 in all, coupled together on the outside and operated in pairs by a HOPE cam opener: they are placed centrally in the window, with fixed panes, two deep, at head and cill.

Windows are fixed to Vertical R.S.J.s which are clad with pressed steel casings of 16 gauge, and covered at the head with 16 gauge pressed steel cornice, as shown on the details opposite. Windows and casings hot-dip galvanized and fixed complete by HOPE'S.

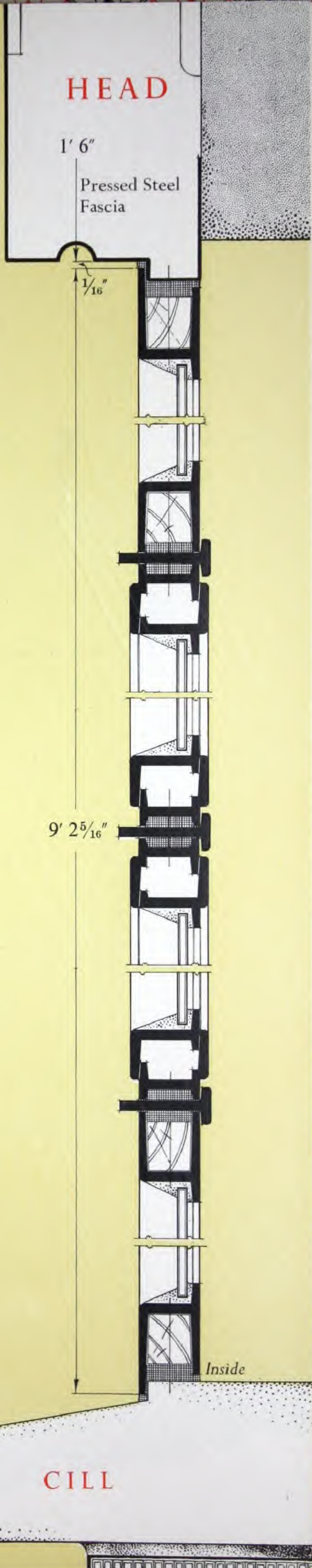
STRUCTURAL DETAILS: *Quarter Full Size*



Pressed Steel Casing around R.S.J.s between windows



Half Full Size Details



HOPE'S School Windows



L.C.C. SCHOOL AT REDRIFF, ROTHERHITHE
R. H. Mathew, A.R.I.B.A., Archt. to L.C.C. and R. Wilson, F.R.I.B.A., Archt. to Schools Division

The Redriff Window is divided vertically and horizontally into three panes with ventilators to right and left of a fixed central portion. The swinging ventilators are coupled together on the outside and fitted with bronze spring catch for operation by hand or, when out of reach, with Hope's window stick. The structure is of R.S. channels which are clad with 16 gauge pressed steel, the cills being also clad with steel and extended in the form of a window board. All windows and pressed steel are hot-dip galvanized and fixed complete by Hope's.



VERTICAL SECTION

Scale:

$\frac{3}{4}$ inch = 1 foot



Pressed steel blind boxes as detailed on page 83 should be specified for sunny exposures

The Redriff Window

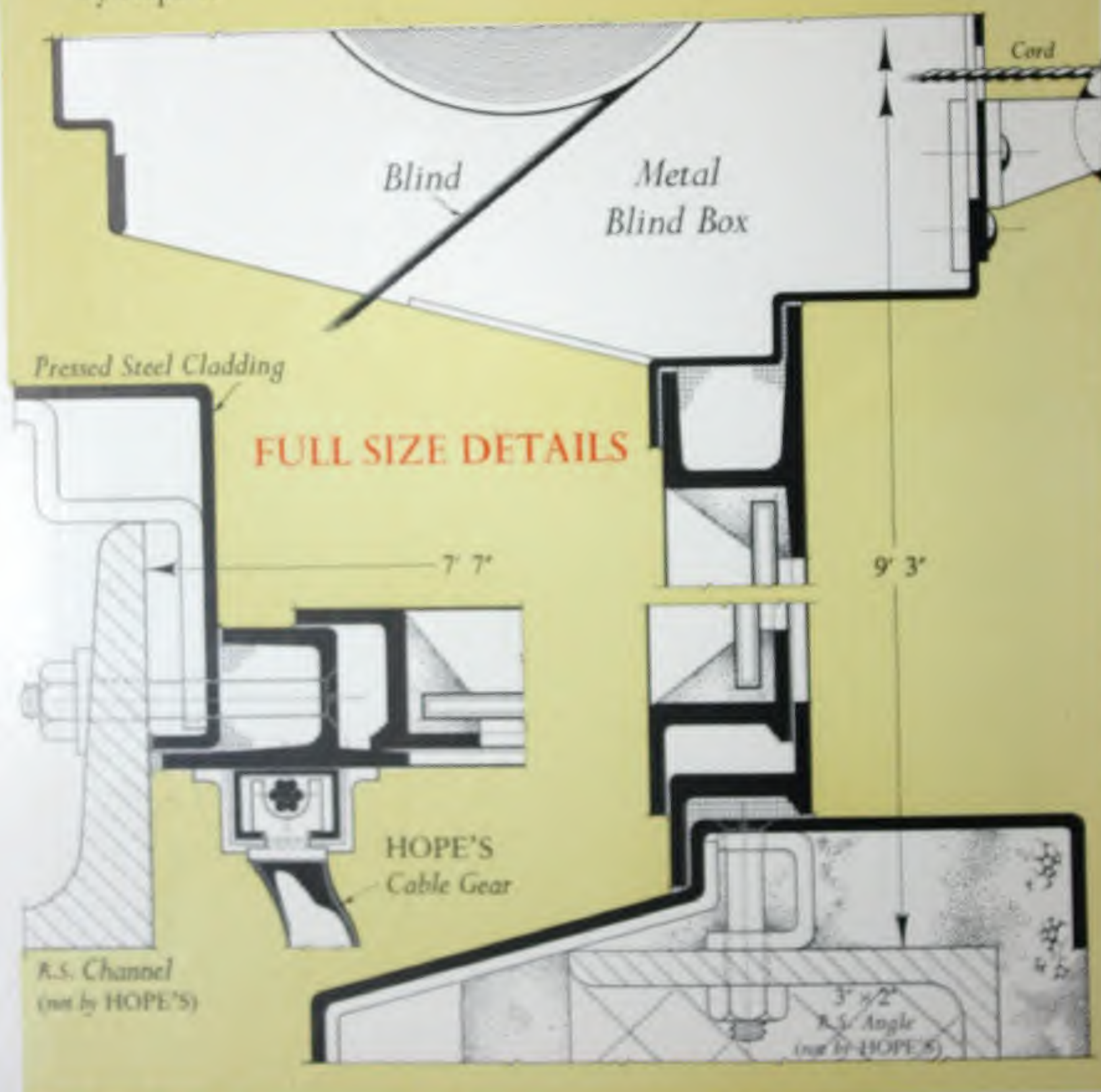


HOPE'S School Windows

The Hertford 'A' Window has been designed for the 8' 3" module in three zones; the lowest zone divided into four outward opening casements; the middle zone fixed and the upper zone with one or two swinging ventilators. The depth of these ventilators is optional, but it is important that they are operated by Hope's cable gear because they are too high up to be opened and closed easily by a long rod.

Pressed steel blind boxes as detailed on page 83 should be specified for sunny exposures.

The details shown are of steel construction with a pressed metal cladding by Hope's.

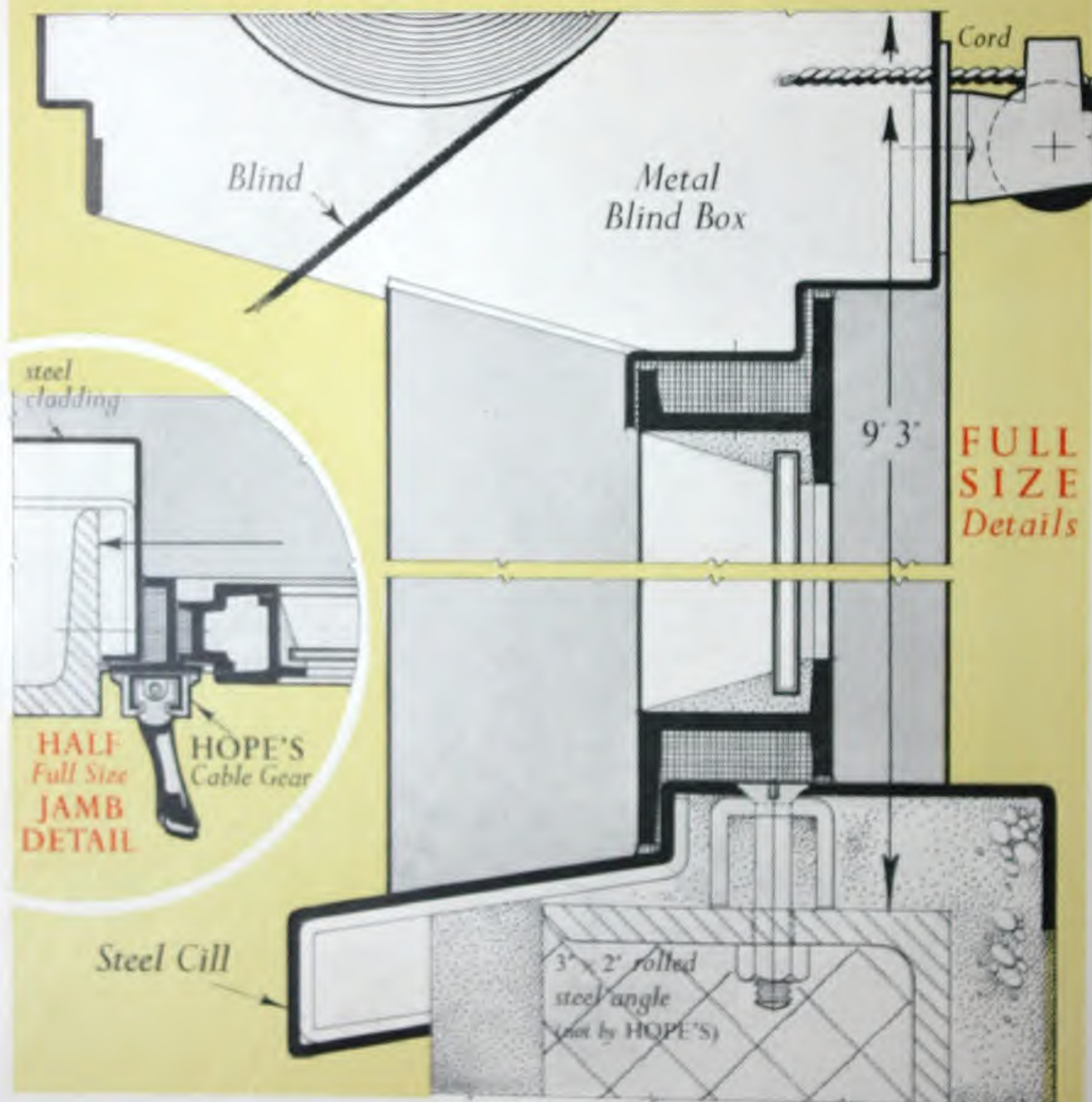


The Hertford 'A' Window



HOPE'S *School Windows*

The Hertford 'B' Window is an improved design on the lines of the *Hertford 'A'* but is divided at cill level into three divisions instead of four. The centre is fixed, and the two outside panes are vertically pivoted on HOPE'S taper friction pivots placed about 9" from the jambs. This reduces the amount of window fittings or ironmongery and allows plenty of space on the window cill inside. Constructed of universal medium section, the swing which is out of reach is provided with HOPE'S cable gear. All opening portions are thus under easy control. The photograph illustrates a blind box with blind operated from inside—this is optional but recommended for sunny exposures.



The Hertford 'B' Window



HOPE'S School Windows

The Berners provides ventilation from a crack opening to about 35° and stays put at any angle. The height of the bottom rail of the ventilator may be varied and the size of the swinging ventilator may also be varied, but the design is based on the principle that a school window should be as simple as possible, capable of being operated by any small school-teacher and strong enough to withstand rough treatment.

With the complete range of ventilation provided it is claimed that this design is superior to any window with a variety of opening casements.

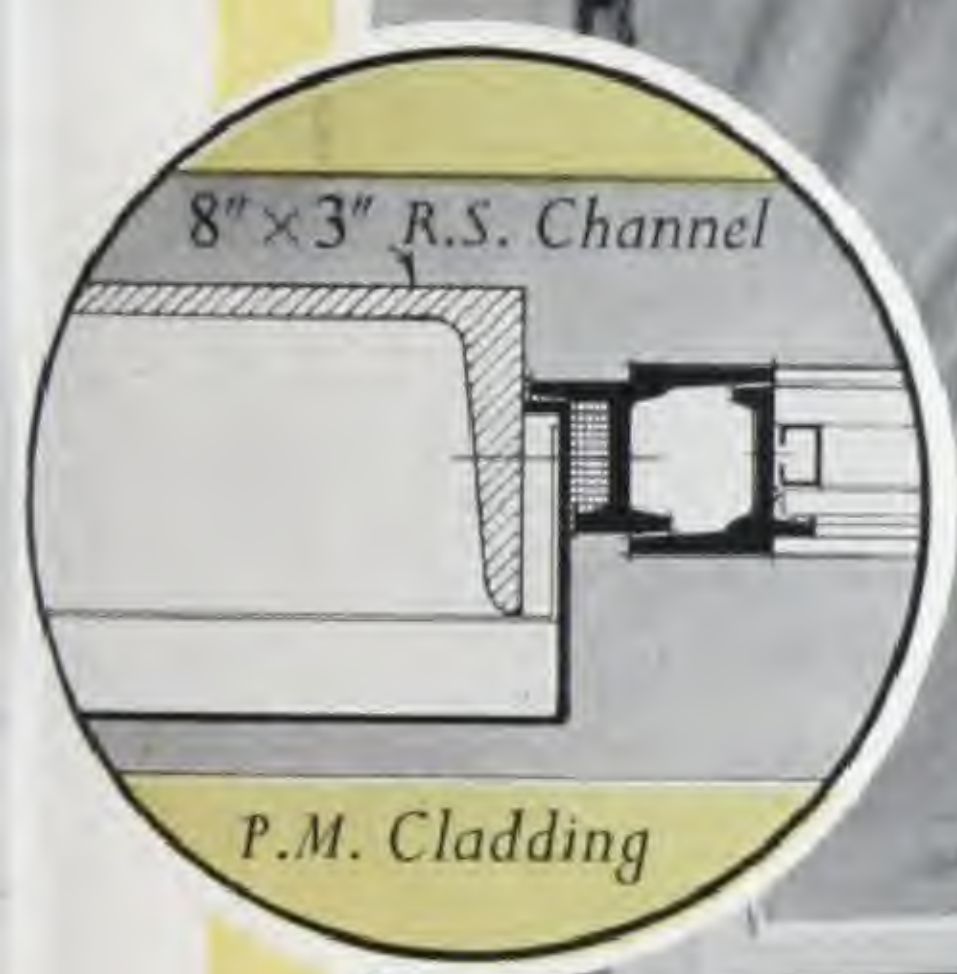
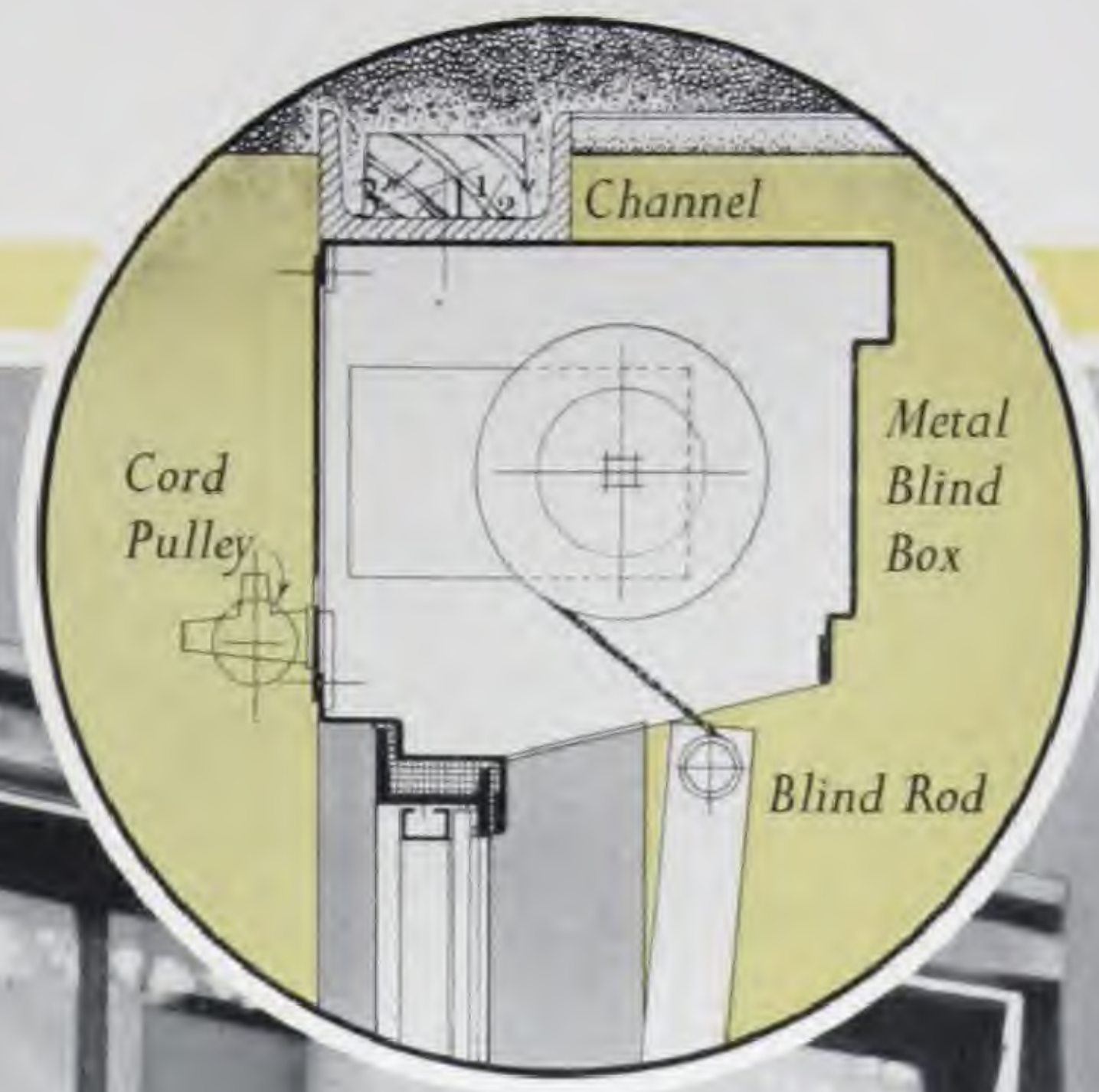
The details on the opposite page are based on steel construction with pressed steel cladding.

A blind box should be specified for all sunny exposures.

On a hot afternoon with this window open and the outside blind down, great comfort is provided for a large class of children.



The Berners

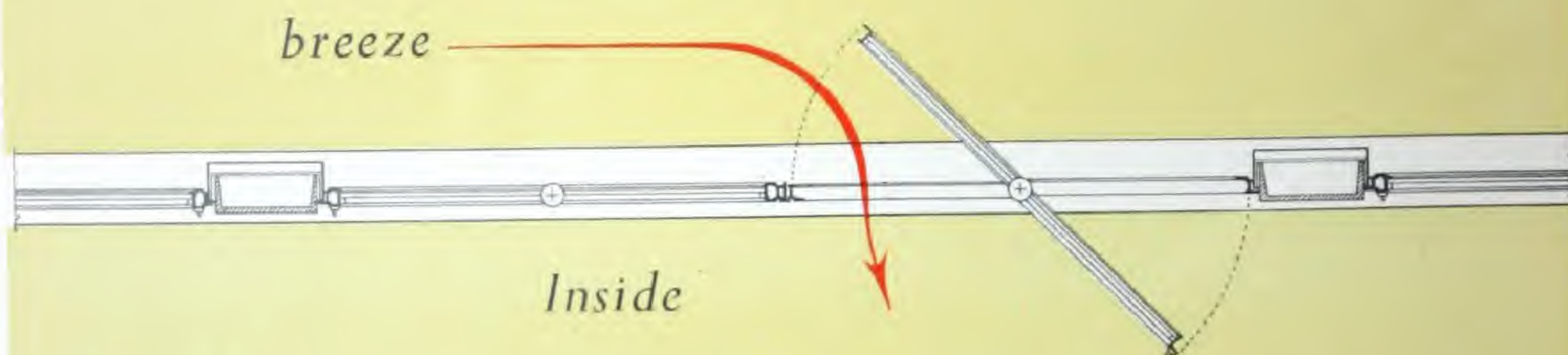


HOPE'S *School Windows*

The Adelphi Window. The design of this window is also based on simplicity and ease of operation, but it provides for complete safety cleaning for upper floors. The two vertically pivoted large casements can each or both be opened from a crack to 90° and the cremone bolt, being on the inside portion, is within reach at any angle and can therefore be operated by women teachers of small stature.

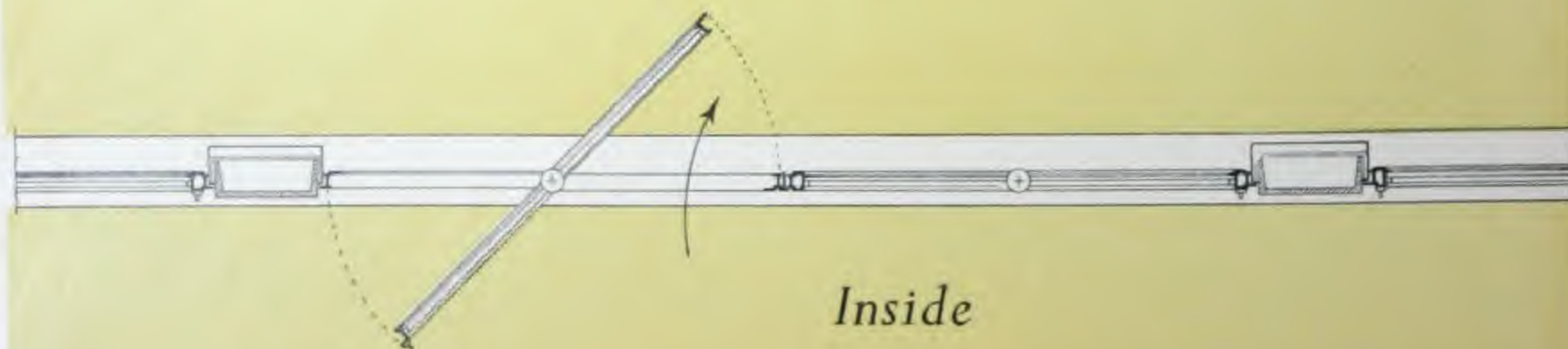
It is claimed that this design provides for any ventilation under all conditions of the English climate and has the minimum of hardware for windows of this size and type. The height of the lower rail may be varied as may also the total height of the casement according to the requirements or ages of the children.

Vertically pivoted casements, like those hinged at the side, can be set open to 'catch the breezes' and direct them into the room on warm days, as illustrated below.



Proof that they will also provide ventilation without draught in a strong wind is supplied by leading motor car manufacturers, many of whom now fit vertically pivoted non-draught ventilating windows in their cars.

strong wind —————→



The Adelphi Window



POWER STATION WINDOWS

There have been great developments in the design and building of power stations during the last few years and eminent architects have contributed to the problem in collaboration with consulting engineers. We are illustrating here a few examples of recent work.

Among the developments which are very much our concern is the design and size of windows which are frequently 40 ft. to 50 ft. high, and call for specially robust construction.

Conventionally designed windows made of normal sections, divided into small panes and moderate sized ventilators, are often inappropriate to these vast openings. Heavy pressed steel mullions and sub-frames can be used to give the necessary scale and strength, as at Ocker Hill and Meaford, and we recommend that ventilators should be as few and as large as possible.

One of the difficulties which the window maker has to deal with is the enormous quantity of fine silt which is sprayed over the buildings from the boiler stacks. This silt finds a lodgement on pivots of normal pattern, building up a column which hardens and prevents the proper closing of the ventilators. These are often at great heights and difficult to clean with the result that breakages are apt to occur. To overcome this we have designed a strap hinge (shown in this illustration) which leaves the channel of the frame unobstructed.

The ventilators in power stations are frequently at great heights and have to be operated mechanically. Our double tension rod gearing has been fitted to some of the largest power stations in Great Britain and the Empire. It is electrically operated, very effective and inconspicuous. A more recent development is hydraulic gear as fitted to Ipswich and Littlebrook. The photographs in this book illustrate the most recent installations.

It is impossible to provide details in a book of this size that would cover all modern requirements and variations of design and we shall always be pleased to provide full working drawings for customers' approval.



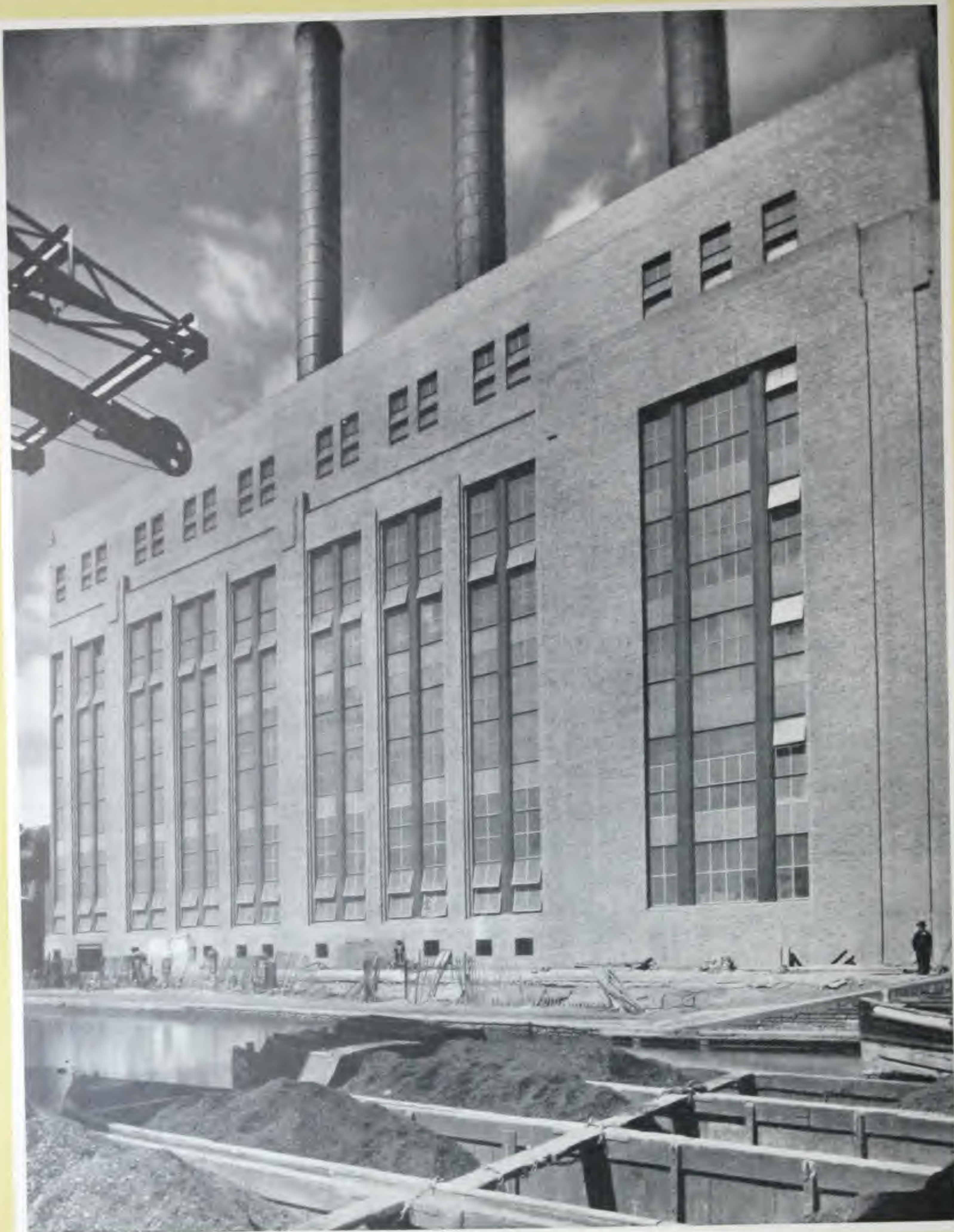


STAYTHORPE POWER STATION, NOTTS

Architect: T. Cecil Howitt, F.R.I.B.A.

Engineers: Balfour, Beatty & Co., Ltd.

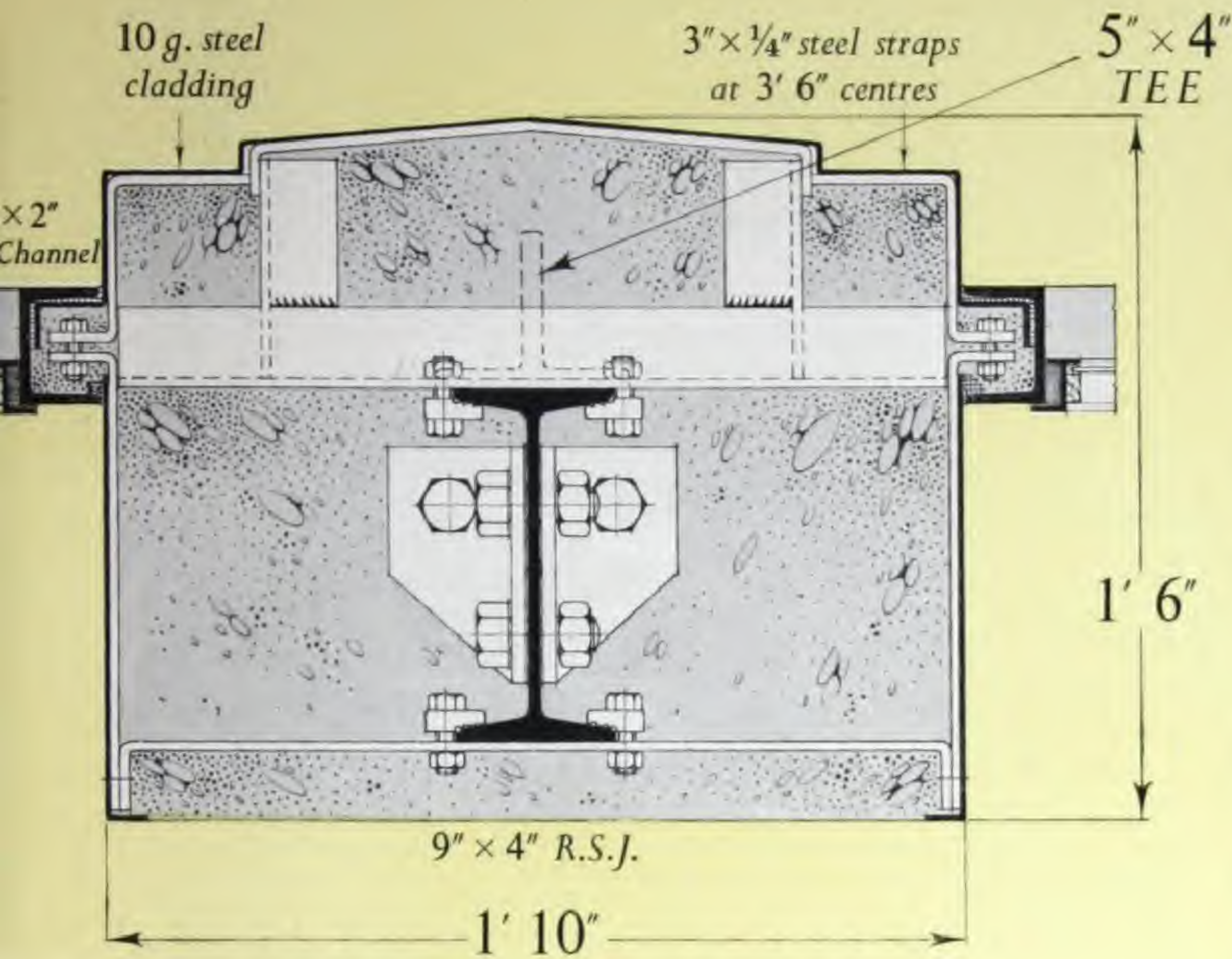
Hope's electrically operated double tension rod gearing with push-button controls on left of photograph.



OCKER HILL POWER STATION, STAFFS

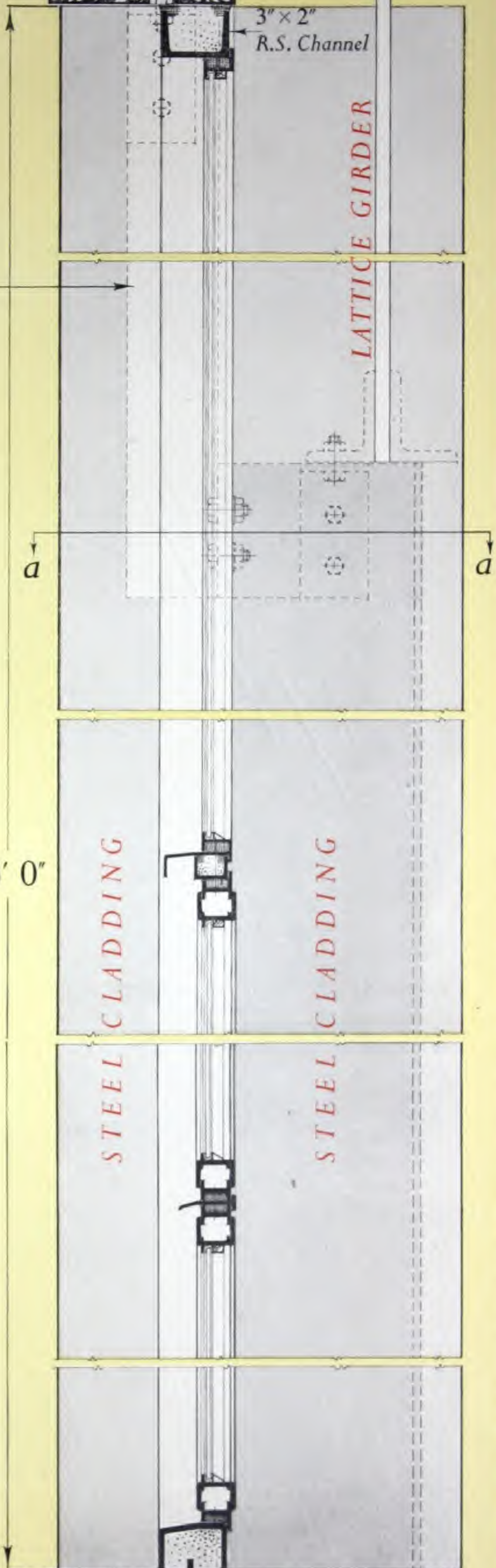
L. G. Mouchel & Partners Ltd., Consulting Engineers

OCKER HILL POWER STATION

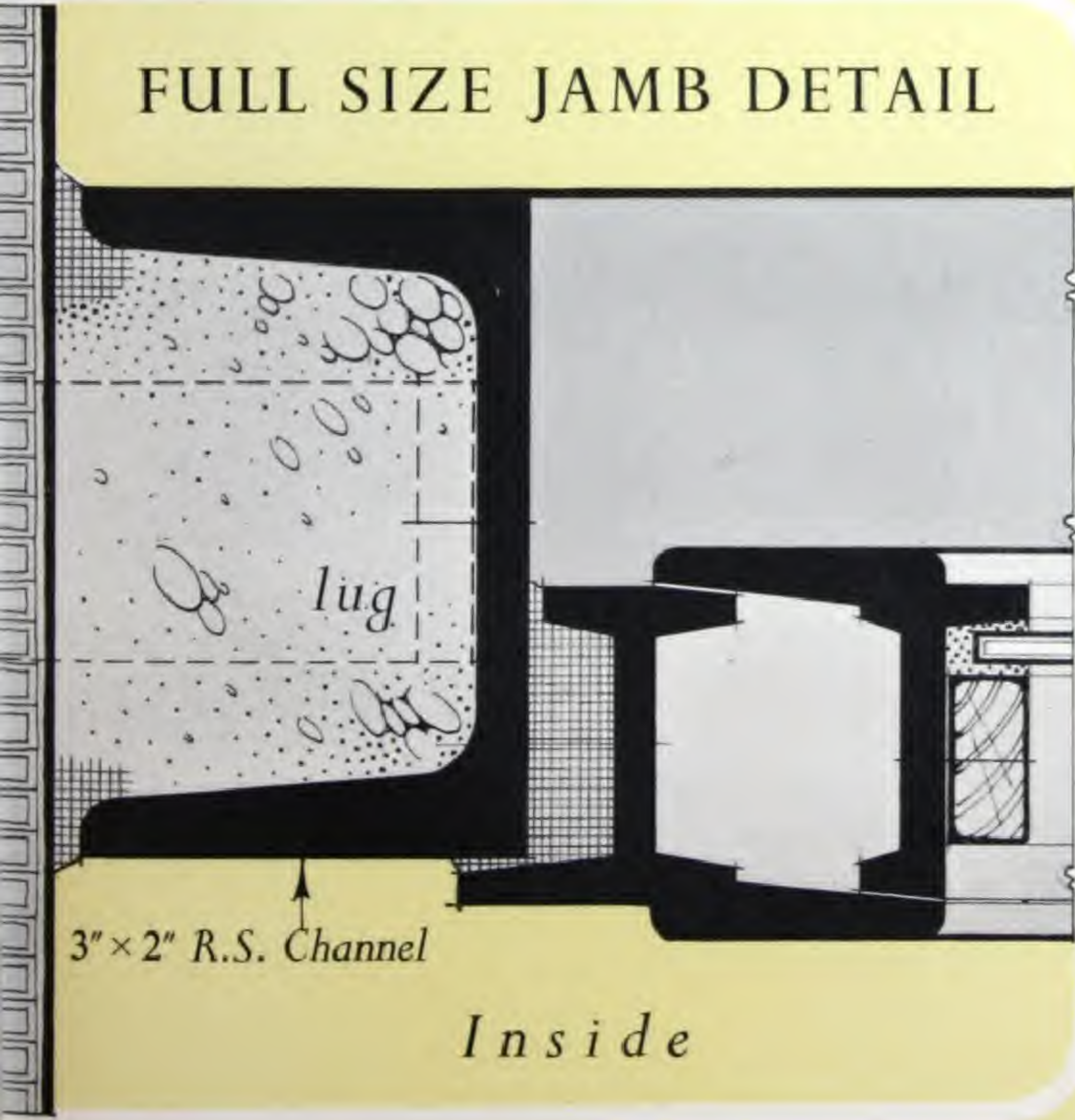


SECTION ON LINE a-a OF
STRUCTURAL MULLION

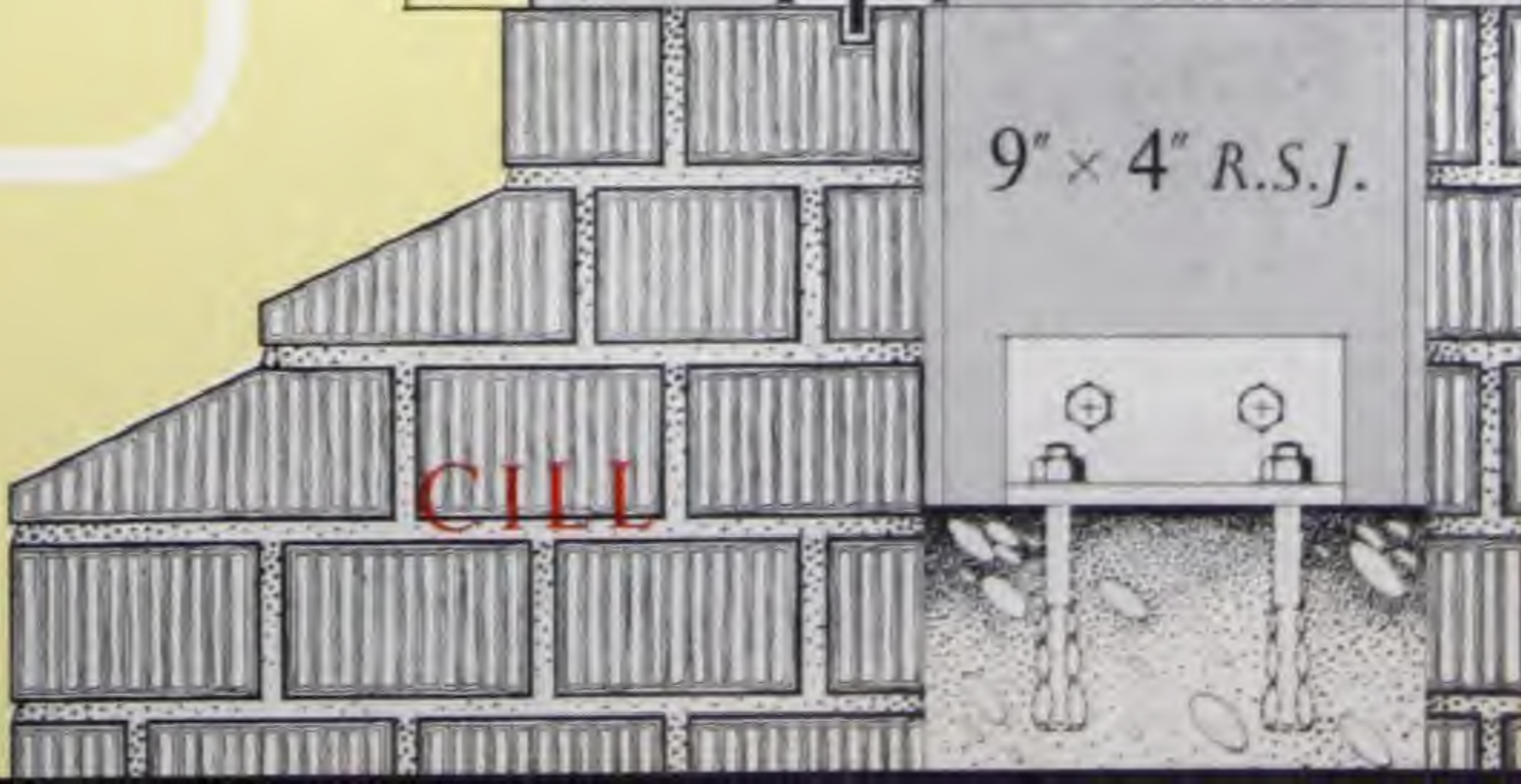
63' 0"

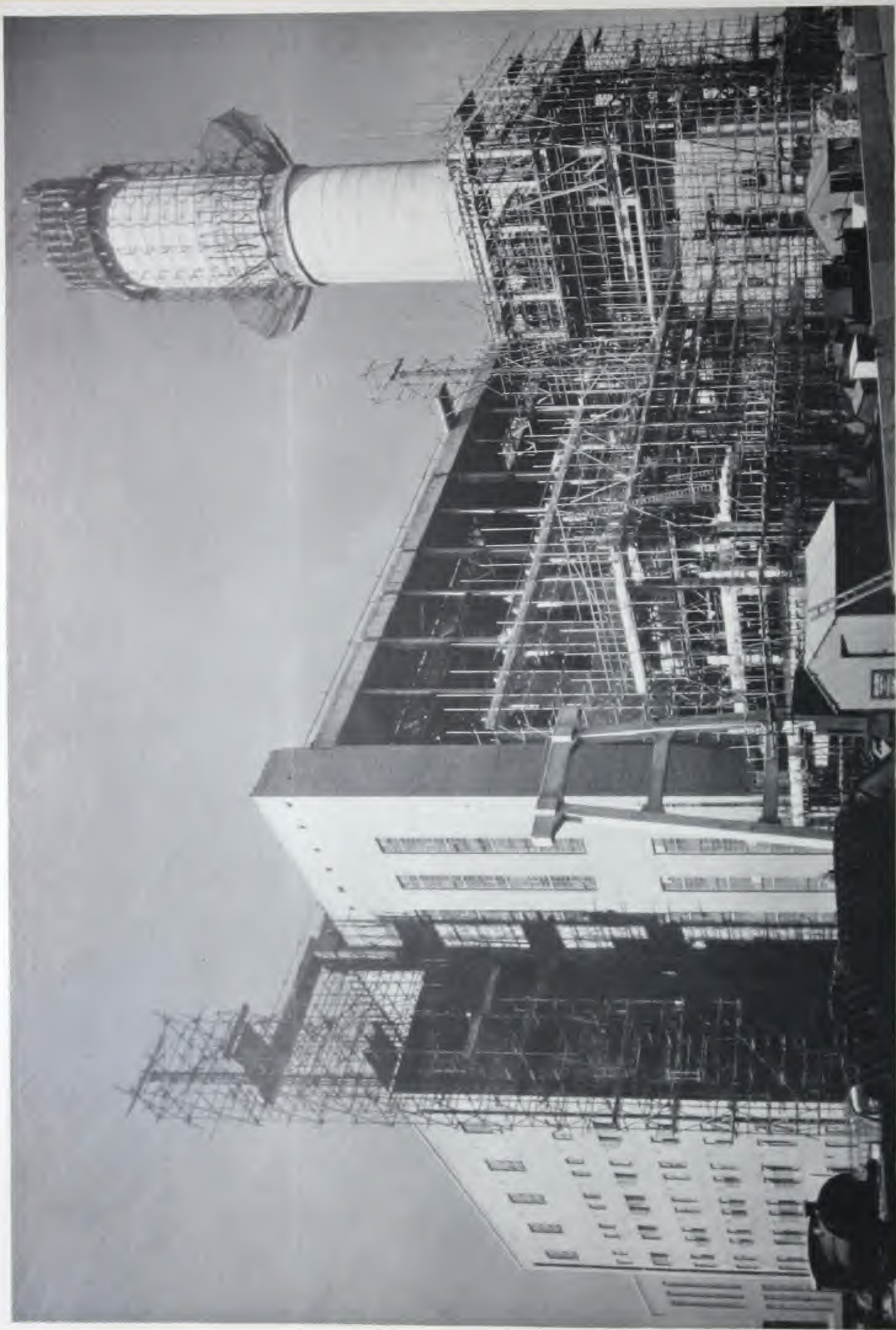


FULL SIZE JAMB DETAIL



DETAILS
Scale: 2" = 1 foot





BRUNSWICK WHARF POWER STATION, POPLAR, E.14
Farmer & Dark, F.F.R.I.B.A., Architects Sir John Bruce and Partners, Consulting Engineers



SKELTON GRANGE POWER STATION, LEEDS
Sir Alexander Gibb & Partners, Consulting Engineers

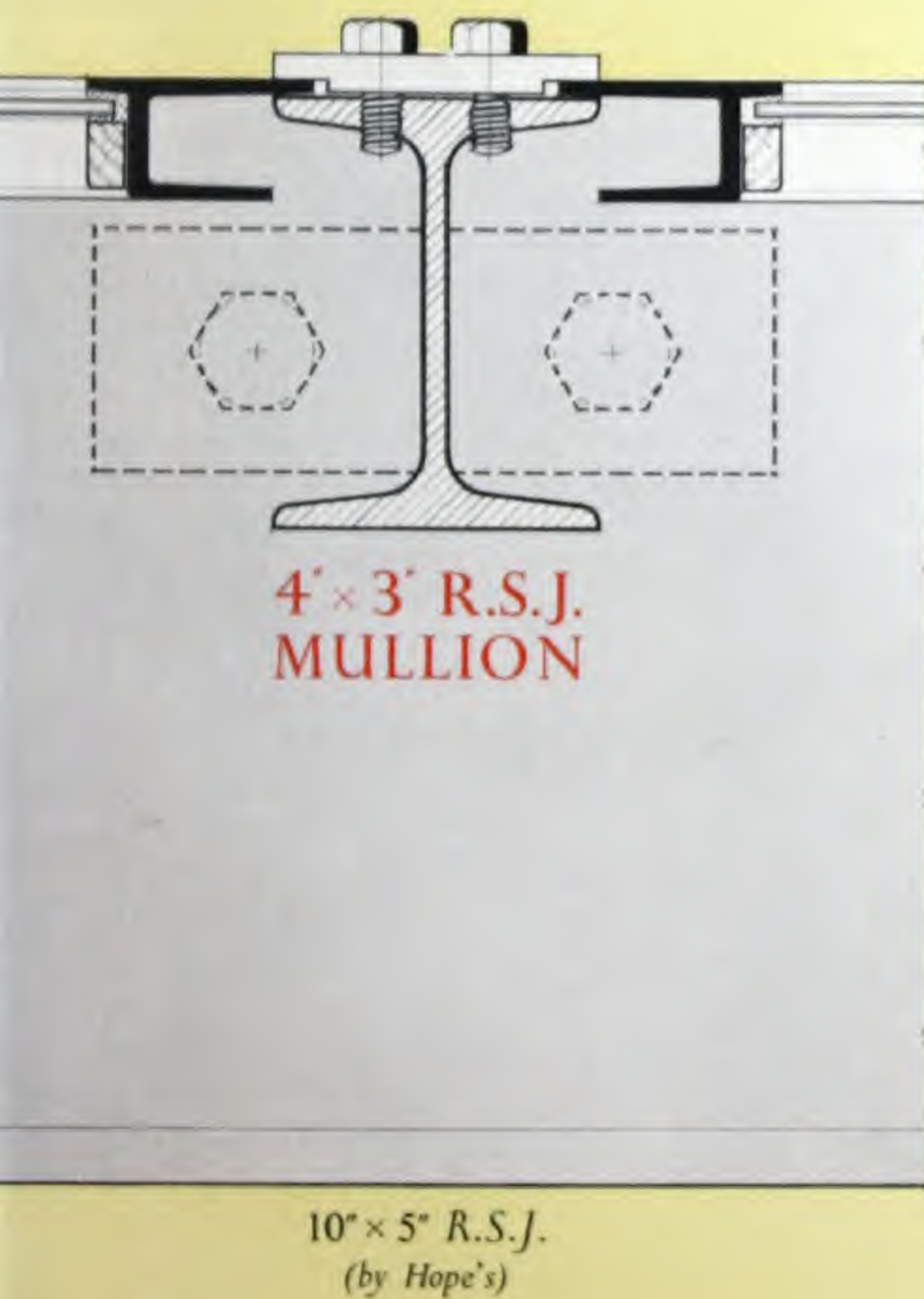


MEAFORD POWER STATION, STAFFS

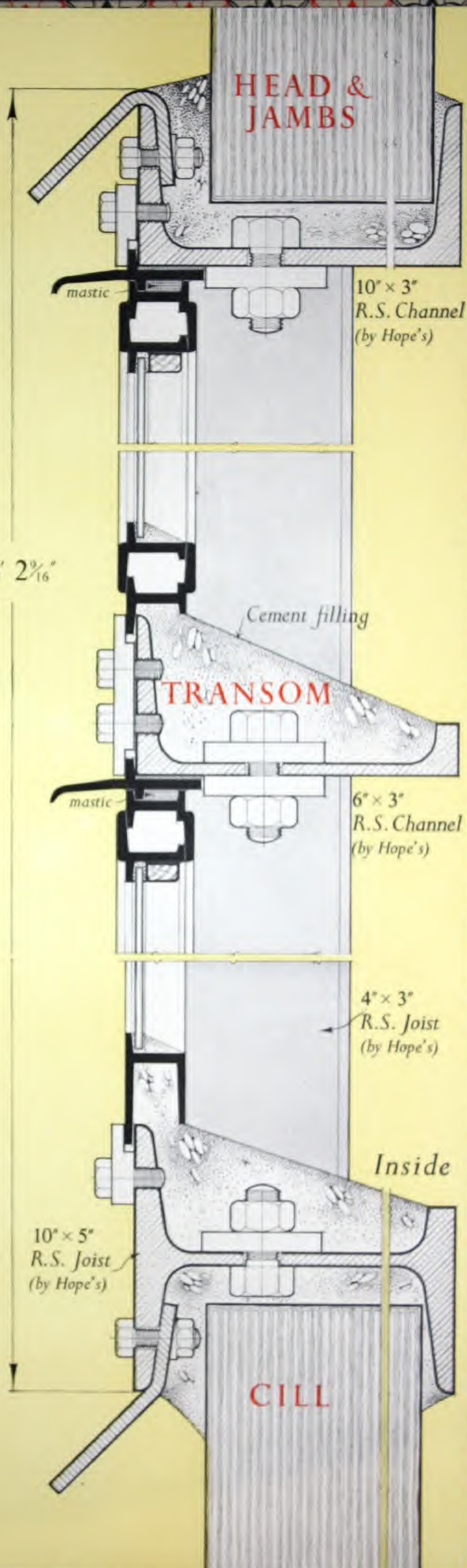
Sir Alexander Gibb & Partners, Consulting Engineers

MEAFORD POWER STATION STAFFS

HALF *Full Size Details*



36' 2⁹/₁₆"





STAYTHORPE POWER STATION, NOTTS
Architect: T. Cecil Howitt, F.R.I.B.A. Engineers: Balfour, Beatty & Co. Ltd.



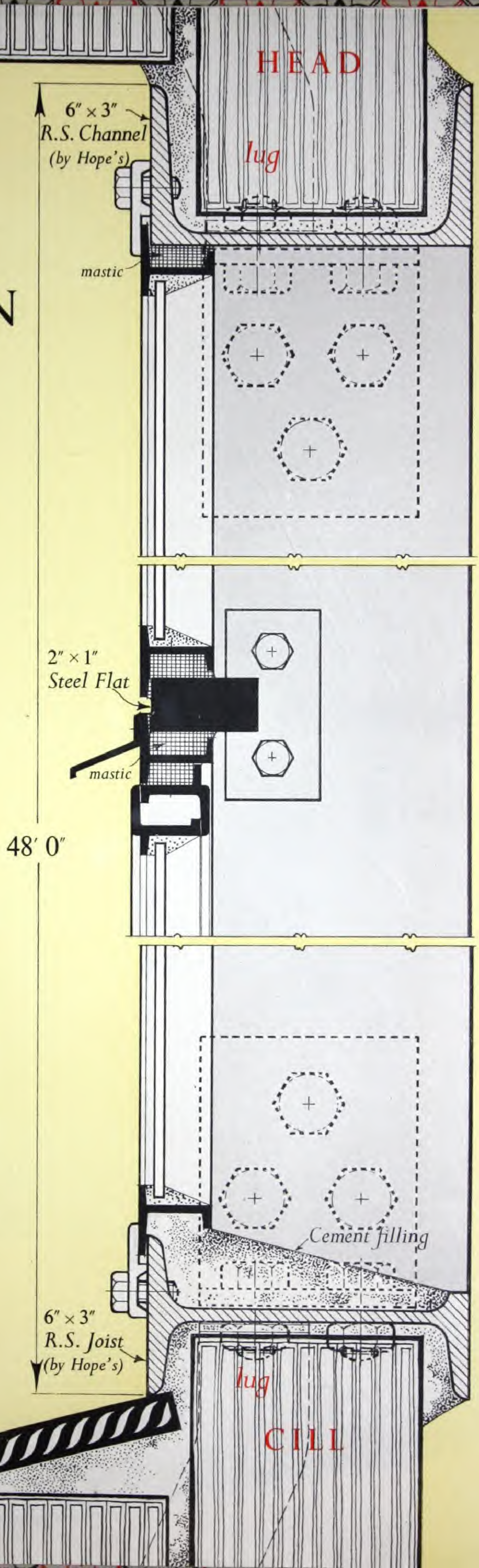
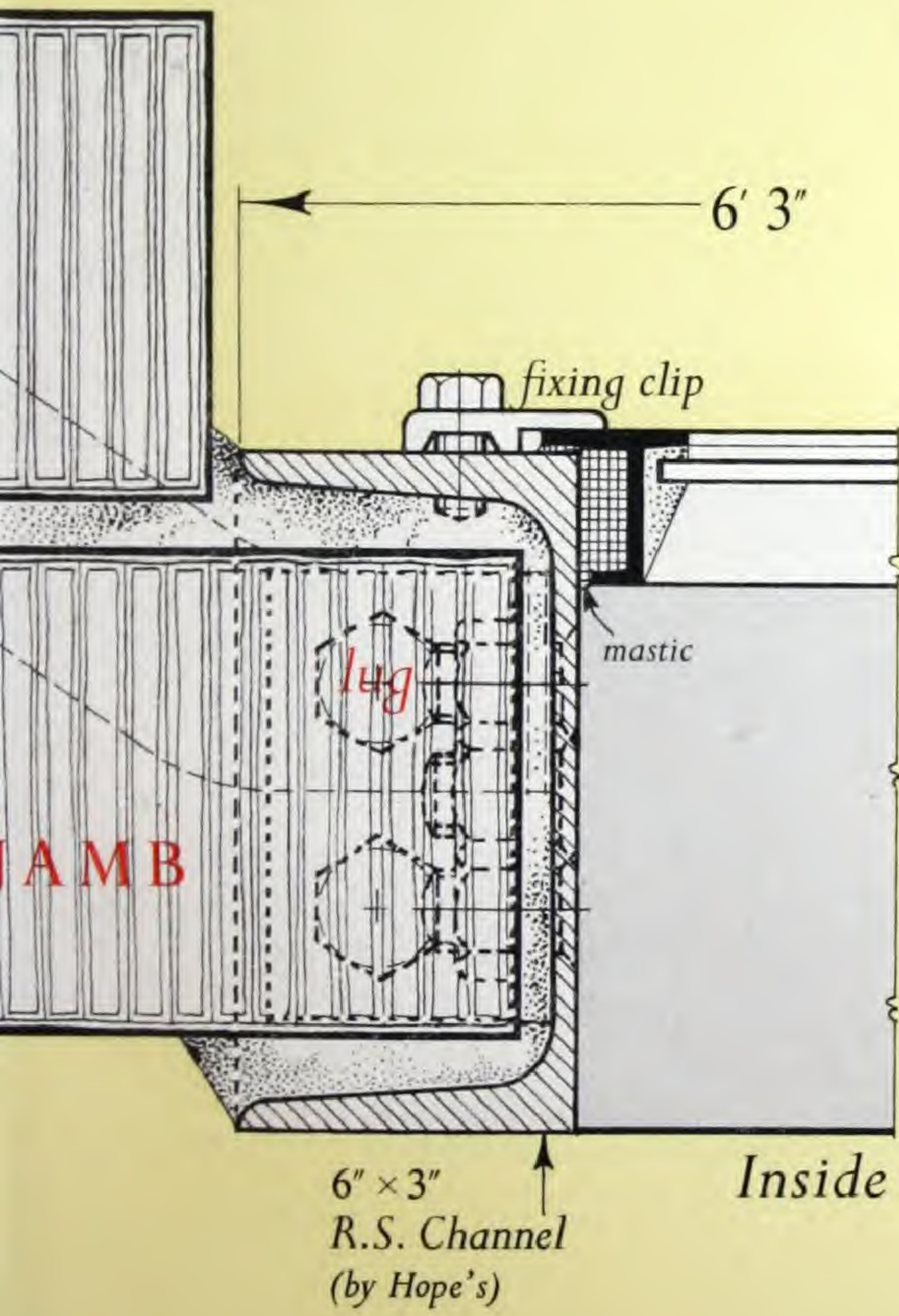
A pair of pressed steel doors and frames supplied and fixed at the Staythorpe Power Station in the new Workshops. Doors of this character and size are a speciality in our Pressed Metal Department. Details and estimates will be gladly supplied.



CLIFF QUAY POWER STATION, IPSWICH

Sir Alexander Gibb & Partners, Consulting Engineers

CLIFF QUAY
POWER STATION
IPSWICH
HALF Full Size Details





KINGSTON-UPON-THAMES POWER STATION

Coode, Vaughan-Lee, Frank & Gwyther, Civil Engineers



NEW POWER STATION, NECHELLS, BIRMINGHAM
J. Alfred Harper & Son, Chartered Architects



USKMOUTH POWER STATION, SOUTH WALES

Johnson Blackett, F.R.I.B.A., Consulting Architect L. G. Mouchel & Partners, Civil Engineers

USKMOUTH POWER STATION SOUTH WALES

HALF Full Size Details

HEAD

Steel
sub-frame

mastic

mastic

4" x 4" x 3/8" Tee
(by Hope's)

mastic

mastic

mastic

mastic

CILL

Inside

7 3/4"

mastic pointing

12" x 5" R.S.J.
WIND BEAMS
at 8' 6" centres
and 12' 6" centres
(not by Hope's)

MULLION

mastic

mastic

6" x 1" steel flat
(by Hope's)

8' 6" centres

8' 6" centres

12" x 5" R.S.J. WIND BEAMS
(not by Hope's)

42' 6"



BROMBOROUGH POWER STATION, CHESHIRE

Sir Alexander Gibb & Partners, Consulting Engineers



HAMS HALL 'B' POWER STATION, BIRMINGHAM

J. Alfred Harper & Son, Chartered Architects

L. G. Mouchel & Partners, Ltd., Consulting Civil Engineers

HOPE'S

Signal Cabin Windows

It is now some years since we first considered the essential points that should govern the design of a window for railway signal cabins.

It was abundantly clear after spending some time in signal cabins on main line railways and watching the signaller at work, that windows must slide so that when open they allow the signaller to put his head out and look up and down the line without obstruction.

The glass in a hinged casement when open, collects moisture and dirt and obscures the view, while cleaning it is often dangerous.

Our Signal Cabin Window consists essentially of 4 units, the 2 central units to slide in opposite directions. This arrangement provides for cleaning the whole window in safety from inside.

It is essential that a Signal Cabin Window shall be in equal numbers of 4 units. If the total length of the cabin does not permit a division without an odd number, the odd one must be vertically pivoted so as to provide for cleaning from the inside. The diagrams below show the layout from 4 units to 8 with the disposition of the necessary vertically pivoted lights.

Specification for Architects' & Engineers' use:

Signal Cabin windows manufactured and fixed by Henry Hope & Sons Ltd. to be constructed in accordance with the drawings and to provide for the safe cleaning of the glass from the inside. The windows to be made of rolled steel sections, welded at all corners, and opening portions hung on 'Coburn' type track carried in a 14 g. pressed steel housing.

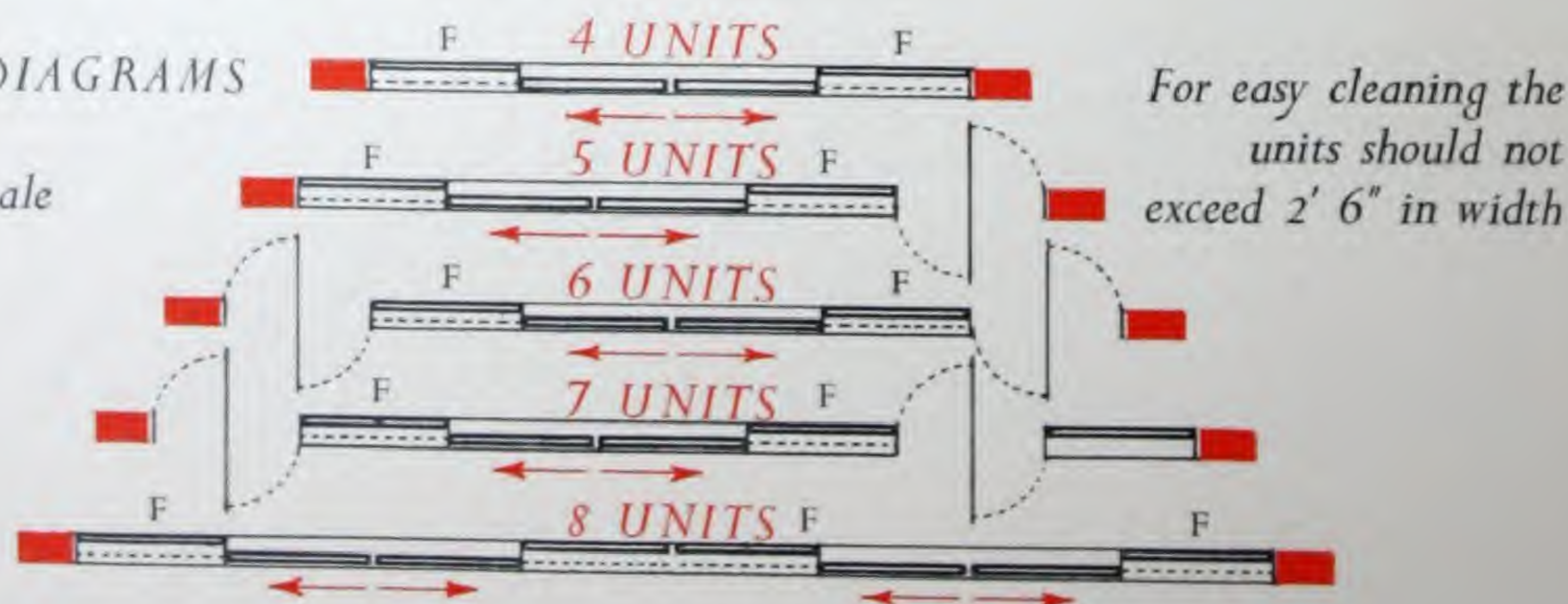
The track at the foot of the opening lights to be of extruded bronze.

Each pair of lights to be fitted with HOPE'S patent wedge-action fastener. Windows to be glazed with $\frac{1}{4}$ " plate glass or 32 oz. sheet and secured with screwless steel glazing beads.

All steelwork to be HOT-DIP GALVANIZED.

PLAN DIAGRAMS

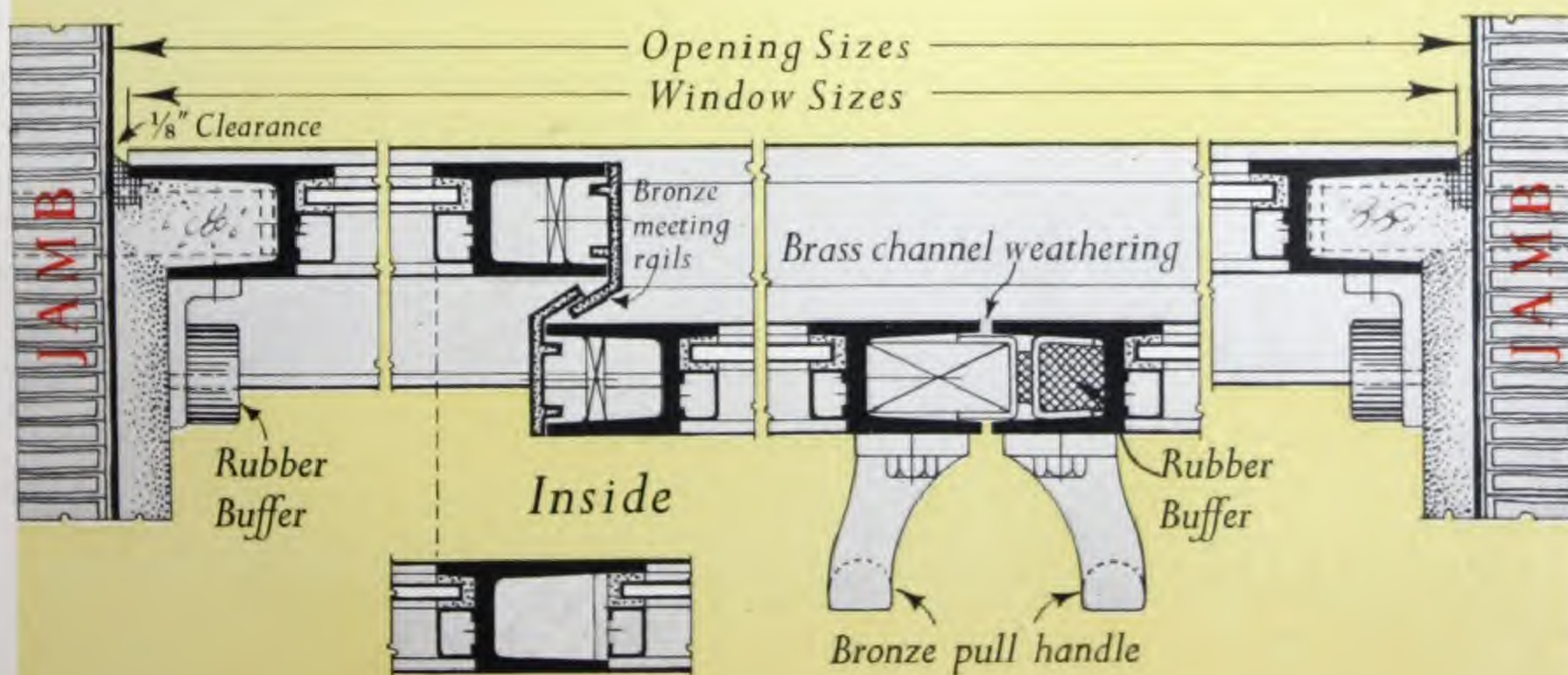
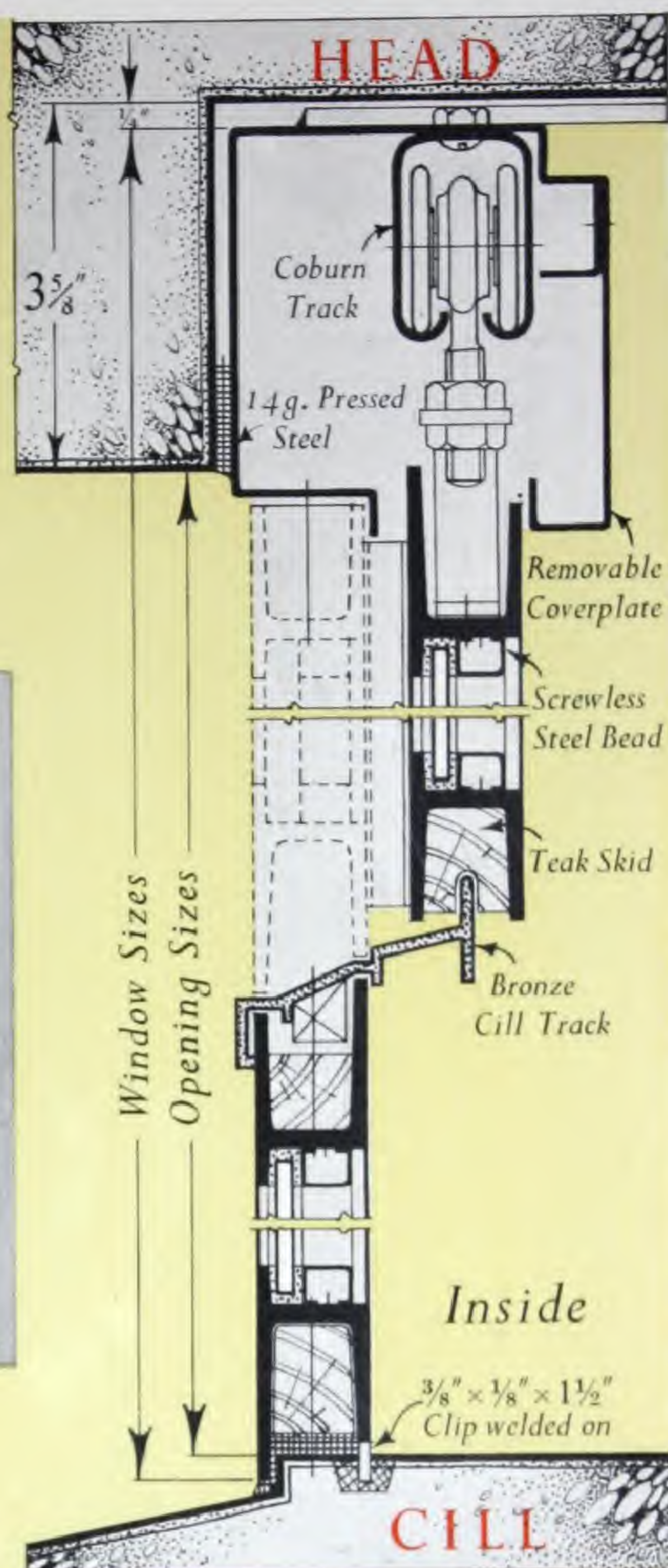
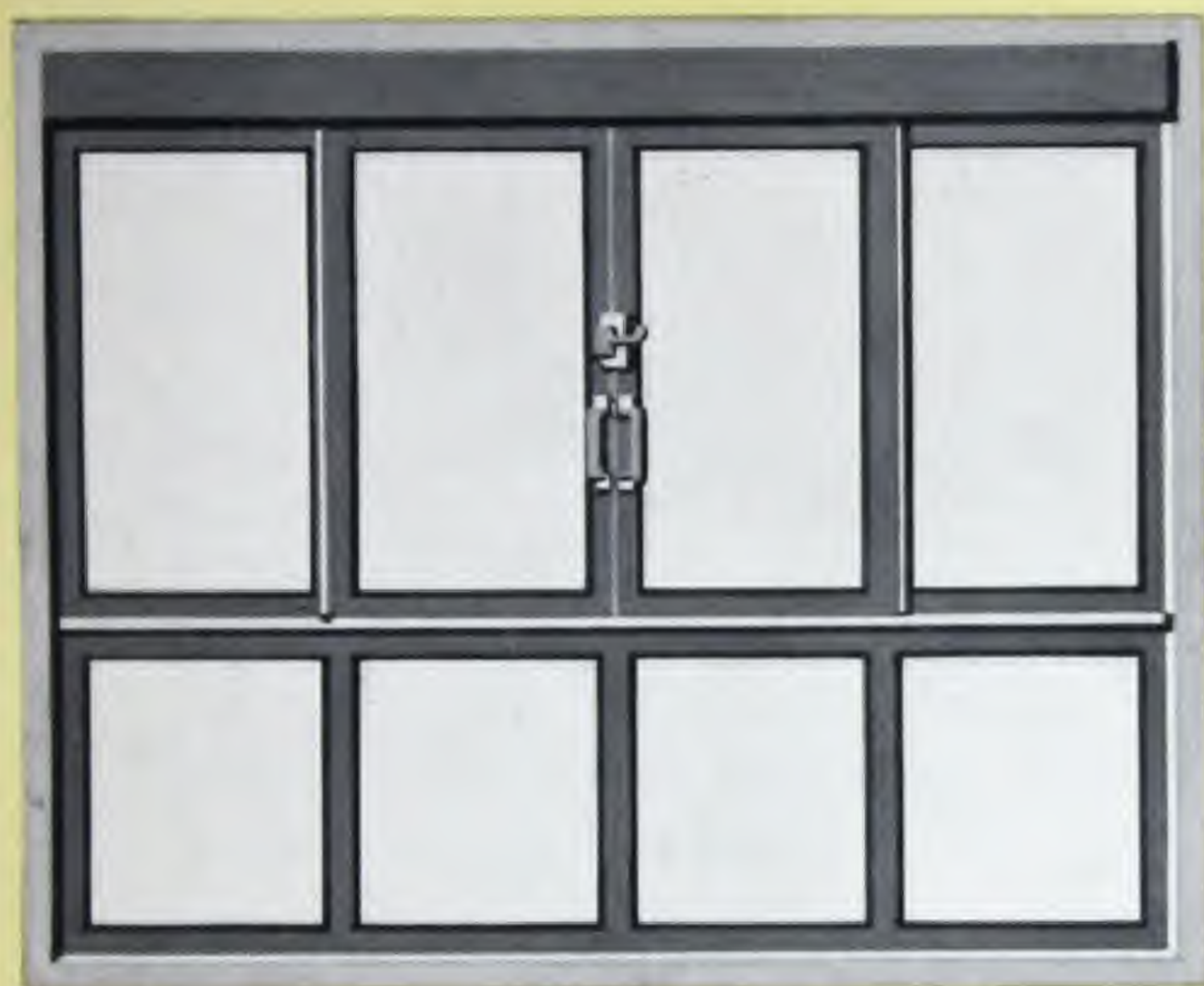
Not to Scale



HOPE'S

Sliding Windows for Signal Cabins

HALF
Full Size Details





HOLLOWAY AMALGAMATION, L.N.E.R.

J. M. Harrison, A.R.I.B.A., Architect



BOW JUNCTION, LONDON, L.N.E.R.

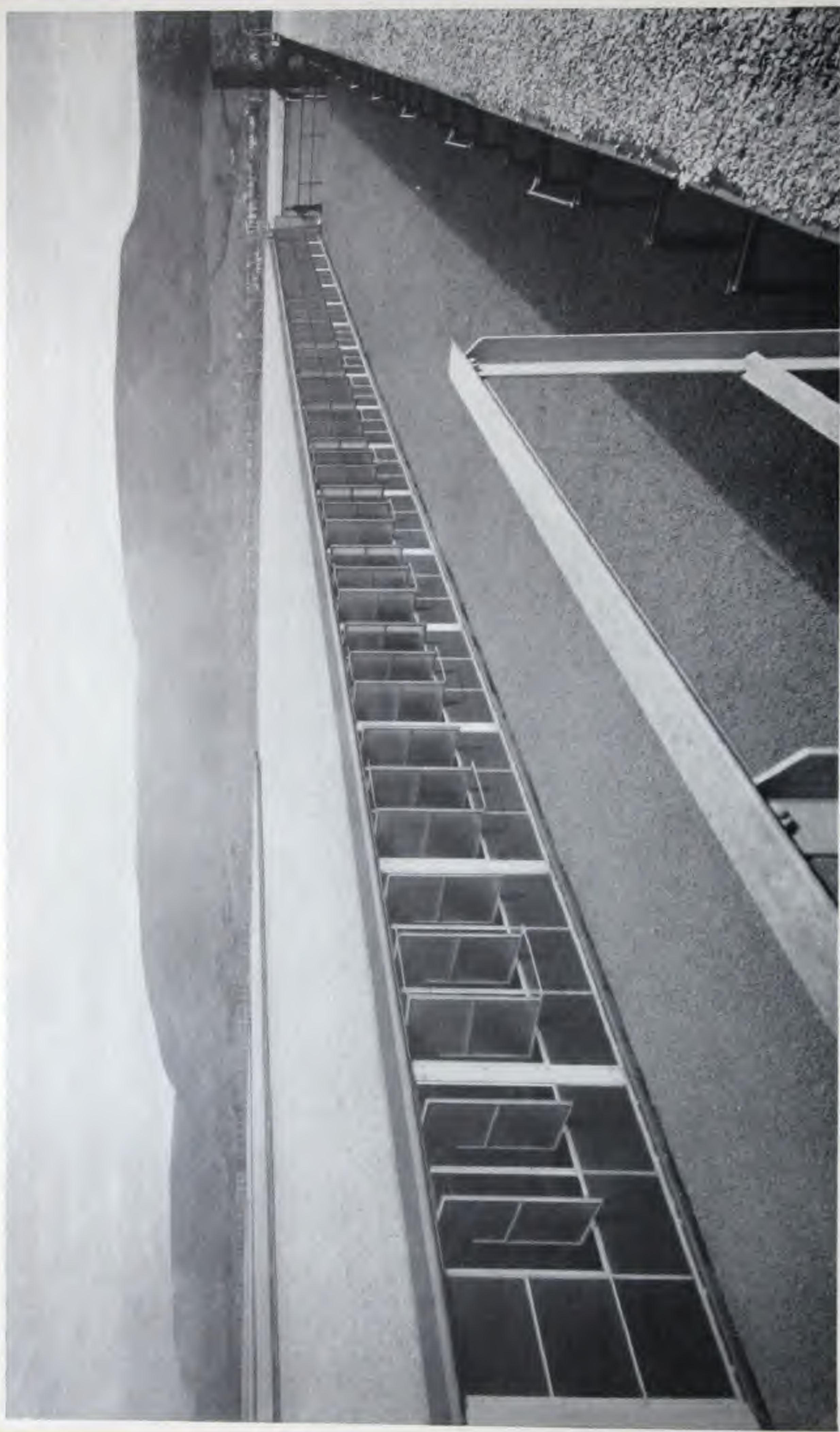
J. M. Harrison, A.R.I.B.A., Architect

The following pages are
given to photographs and
details of fine buildings in
all parts of the world where
HOPE'S Metal Windows
have been used





LONGFELLOW BUILDING, WASHINGTON, D.C.
William Lescaze, Architect



THE STEEL COMPANY OF WALES LTD

ABBAY WORKS, PORT TALBOT

Sir Percy Thomas & Son, P.P./A.R.I.B.A., Architects *W. S. Atkins & Partners, Consulting & Chartered Civil Engineers*



THE STEEL COMPANY OF WALES LTD

These transverse clerestories (of which there are 156) with vertically pivoted casements opening to 135° afford a new and efficient method of ventilation. Each range is operated electrically and can be set open to any extent within the range of 135° according to the direction of the wind. Dense fumes are generated in the casting shop below and it has been found that these ventilators are very effective in keeping the atmosphere clear.



QUEEN ELIZABETH HOSPITAL, BIRMINGHAM

Lanchester & Lodge, FF.R.I.B.A., Architects



LONDON UNIVERSITY
Adams, Holden & Pearson, Architects



NATIONAL INSTITUTE OF MEDICAL RESEARCH, MILL HILL, LONDON
Maxwell Ayrton & Partners, Architects



THE BLACK MARBLE BUILDING IN GREAT MARLBOROUGH STREET, LONDON, FOR IDEAL BOILERS & RADIATORS LTD.

Gordon Jeeves, F.R.I.B.A., Architect



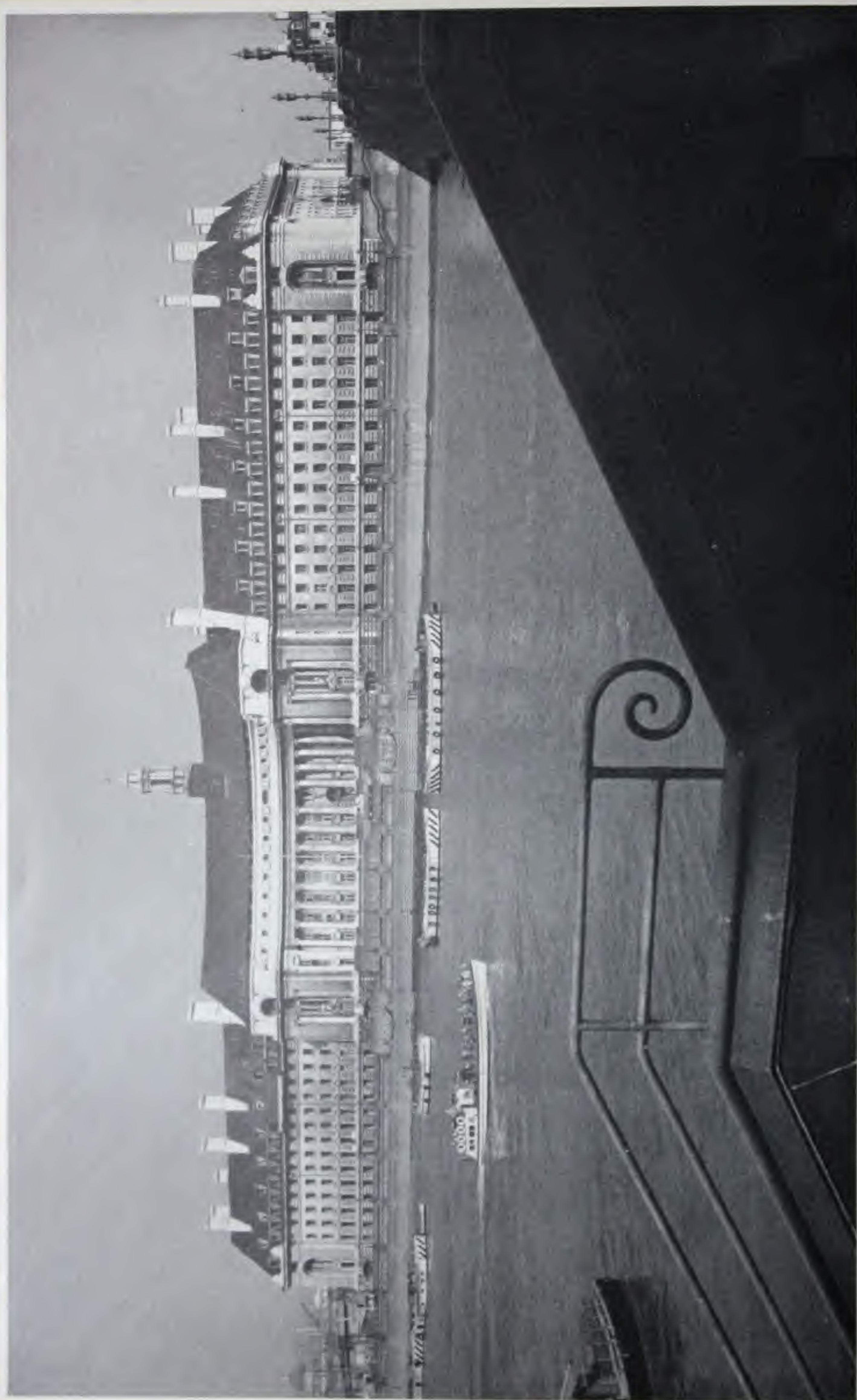
NEW OFFICES, BANK OF ENGLAND

Victor Heal & Smith, F.F.R.I.B.A., Architects

HOPE'S bronze windows on the ground floor and galvanized steel windows on the upper floors.



FORTRESS HOUSE, SAVILLE ST., LONDON, W.1
W. Curtis Green, R.A., Son & Lloyd, Architects



LONDON COUNTY HALL

Ralph Knott & E. Stone Collins, Architects

This photograph is of the river front of the original blocks of the London County Hall which was interrupted in building by the 1914 war and finished after its conclusion



LONDON COUNTY HALL EXTENSIONS Architects: *F.R. Horns, F.S.A., F.R.I.B.A., in association with E. P. Wheeler, F.R.I.B.A.*
This is a photograph of the blocks erected in 1938 on Belvedere Road at the back of the main block on the river.
There are over 5,000 Hope's windows in these buildings.



IMPERIAL CHEMICAL HOUSE & THAMES HOUSE, MILLBANK, LONDON

Sir Frank Baines, Architect



FESTIVAL OF BRITAIN, 1951
COUNTRY PAVILION, SOUTH BANK EXHIBITION

Brian O'Rorke, A.R.A., M.A. (Cantab.), F.R.I.B.A., Architect

The vertical canvas sunshades at the first floor level can be rotated simultaneously by HOPE'S electrically controlled gear, so as to exclude or admit the sunlight at will.



MANITOBA PARLIAMENT BUILDING, WINNIPEG. *Frank W. Simon, Architect*
Hope's steel casements, installed in 1916, are still giving good service under extreme conditions of heat and cold

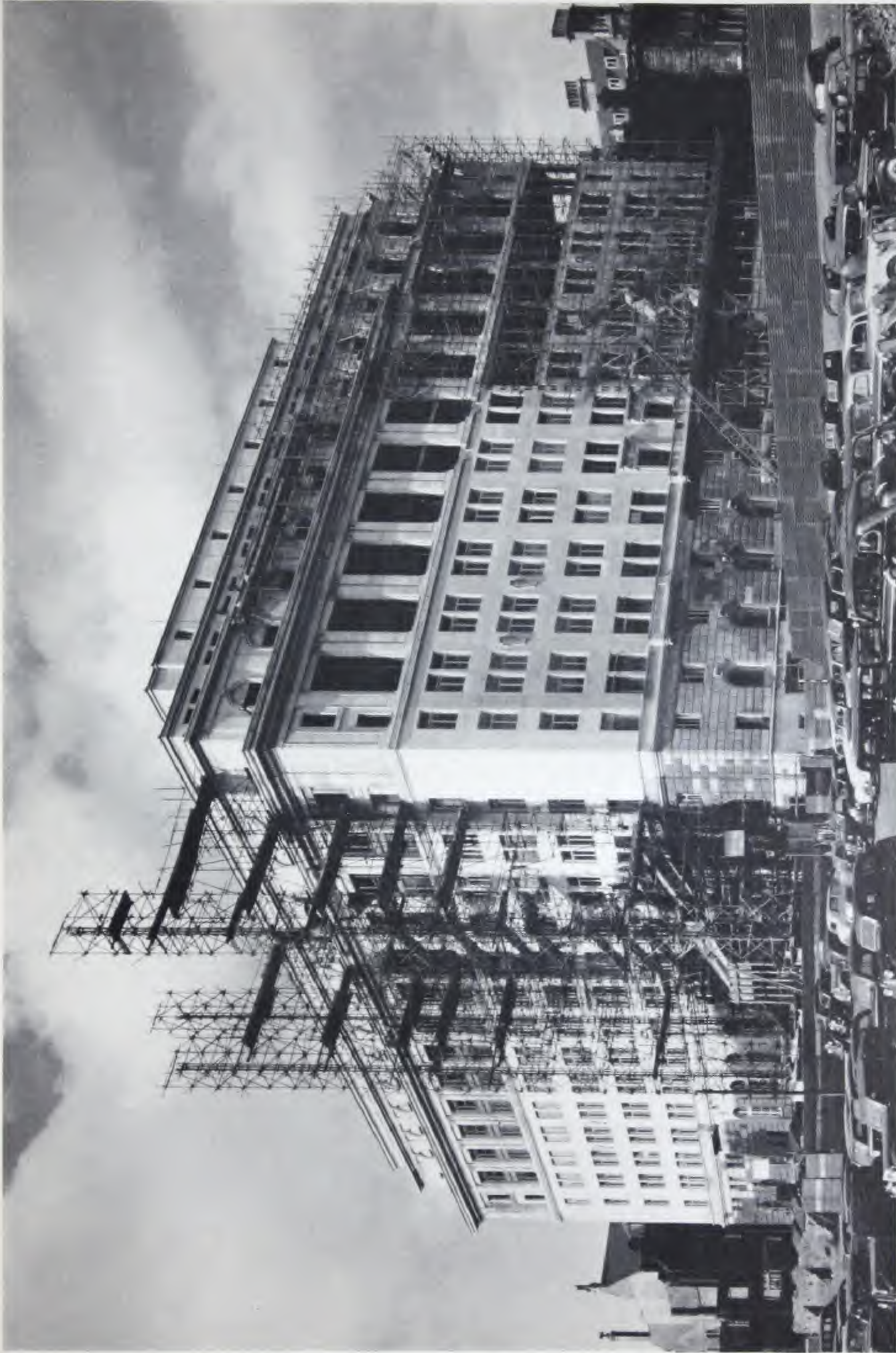


MERSEY TUNNEL, GEORGE'S DOCK VENTILATION BUILDING
Herbert J. Rowse, F.R.I.B.A., Architect



ADELPHI HOTEL, LIVERPOOL

This building, designed by R. Frank Atkinson, F.R.I.B.A., was badly bombed during the war and the whole of the wooden windows were taken out and replaced with Hope's galvanized steel windows of similar design to that shown on page 27.



INDIA BUILDINGS, LIVERPOOL

Herbert J. Rowse, F.R.I.B.A., Architect

This building was badly bombed and burnt during the war and new Hope's windows of medium section are now being installed (1951).



RHODES HOUSE, OXFORD
Sir Herbert Baker, A.R.A., Architect



IMPERIAL FORESTRY INSTITUTE, OXFORD
Thomas Worthington & Sons, Architects



ROYAL INFIRMARY, EDINBURGH

Thomas W. Turnbull, F.I.A.A., M.I.Struc.E., Architect



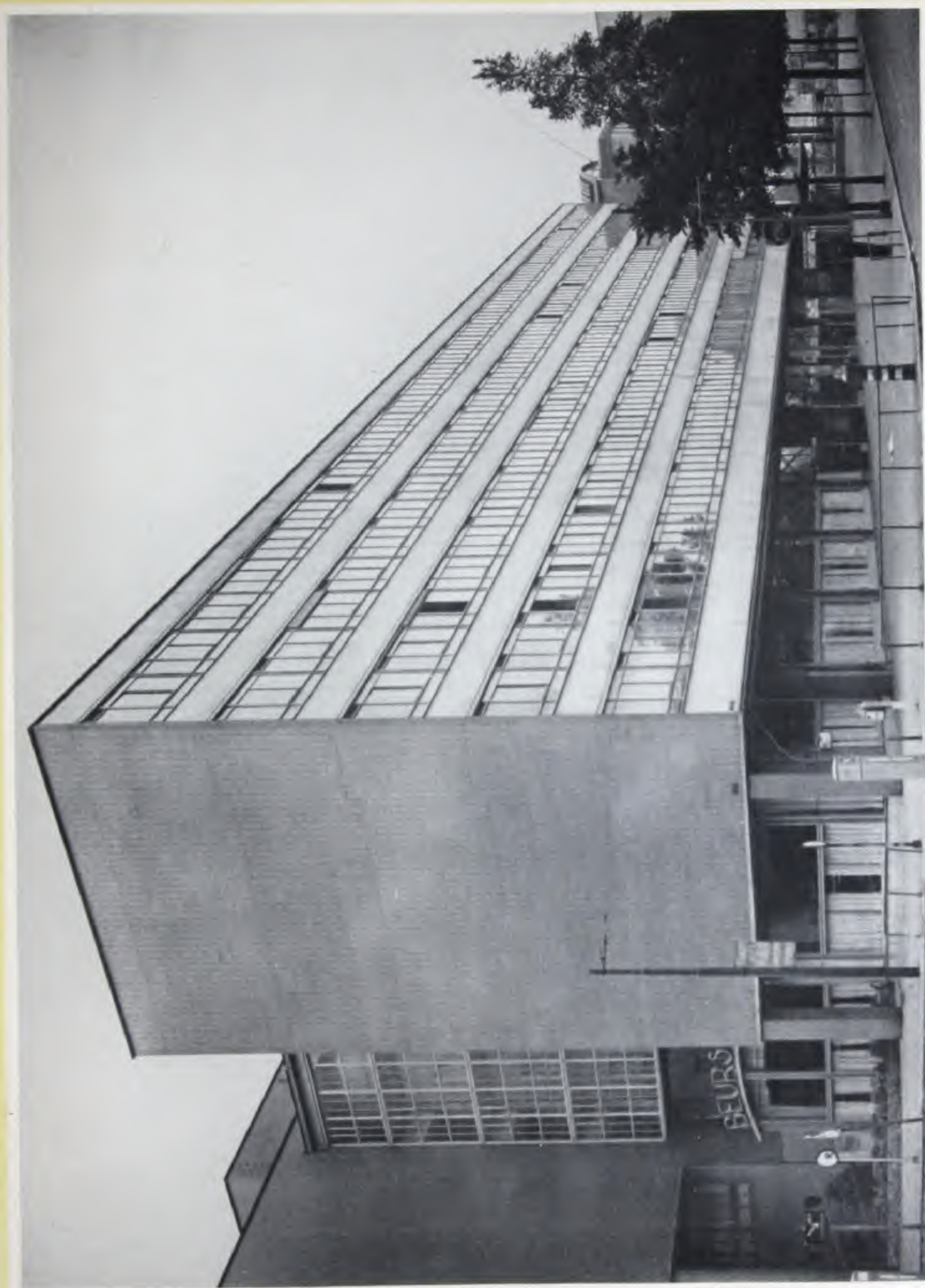
E. J. KAUFMANN RESIDENCE, BEAR RUN, PENNSYLVANIA

Frank Lloyd Wright, Architect



PALACE OF THE LEAGUE OF NATIONS, GENEVA

One of the few contracts on this building awarded to a British firm was for Hope's windows



ROTTERDAM STOCK EXCHANGE
J. F. Staal, Architect



BANK OF INDIA, BOMBAY
Gregson, Batley & King, Chartered Architects



HONG KONG & SHANGHAI BANK, HONG KONG
Palmer & Turner, Architects & Consulting Engineers

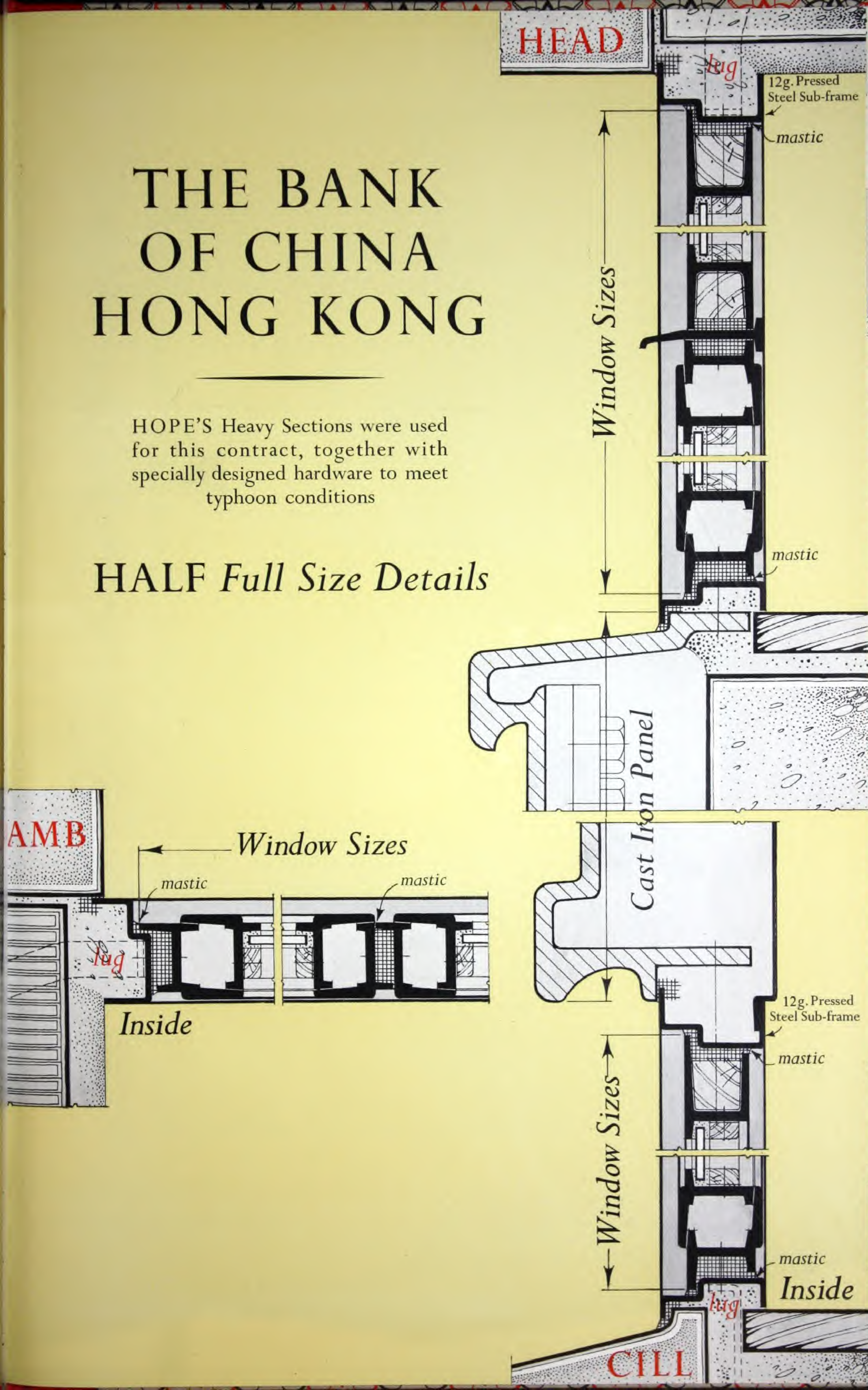


BANK OF CHINA, HONG KONG
Palmer & Turner, Architects & Consulting Engineers

THE BANK OF CHINA HONG KONG

HOPE'S Heavy Sections were used
for this contract, together with
specially designed hardware to meet
typhoon conditions

HALF Full Size Details



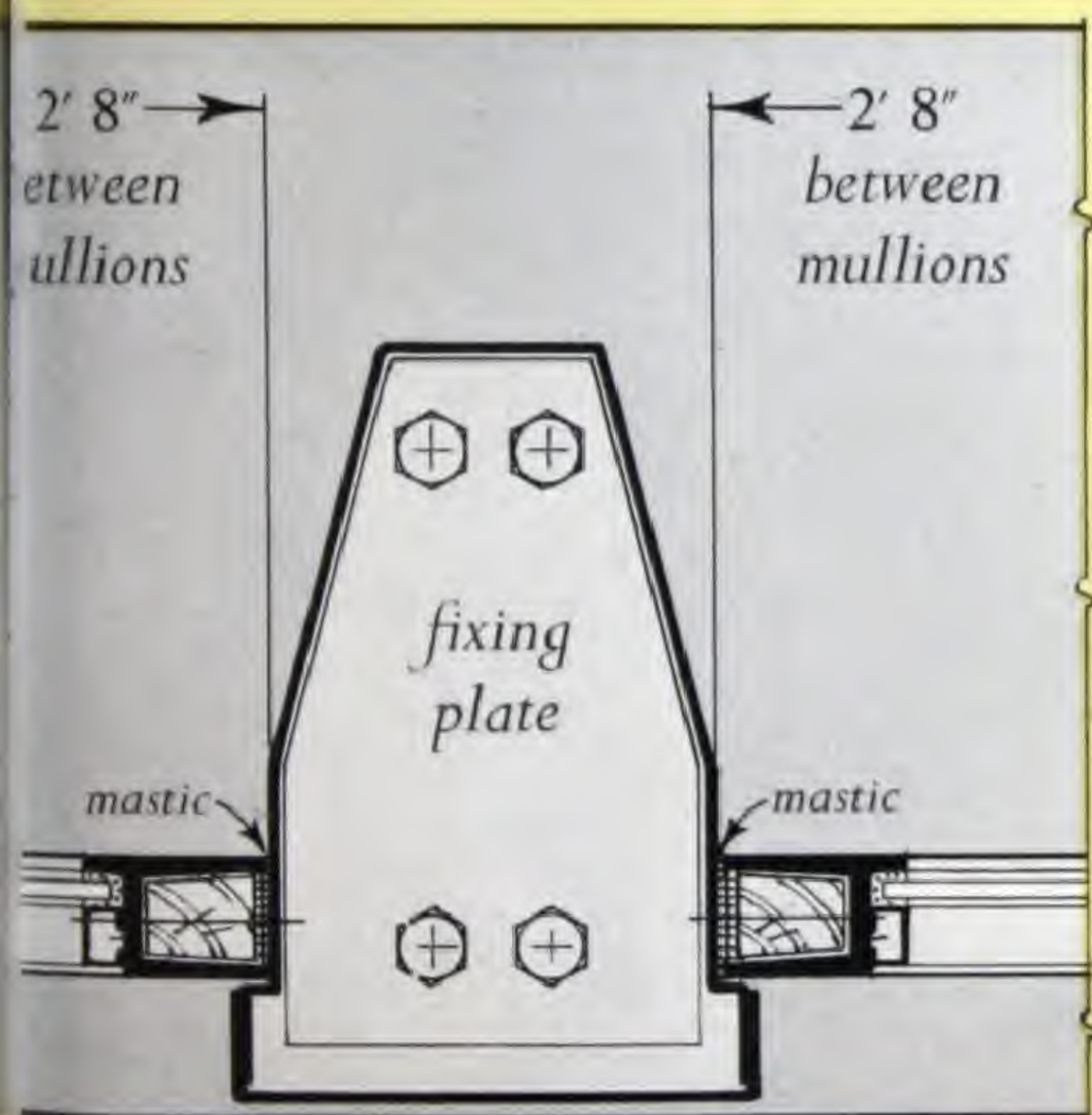


BRITISH RESIN PRODUCTS LTD., Barry, Glam.
Michael Patrick, A.R.I.B.A., Architect

Canteen Block

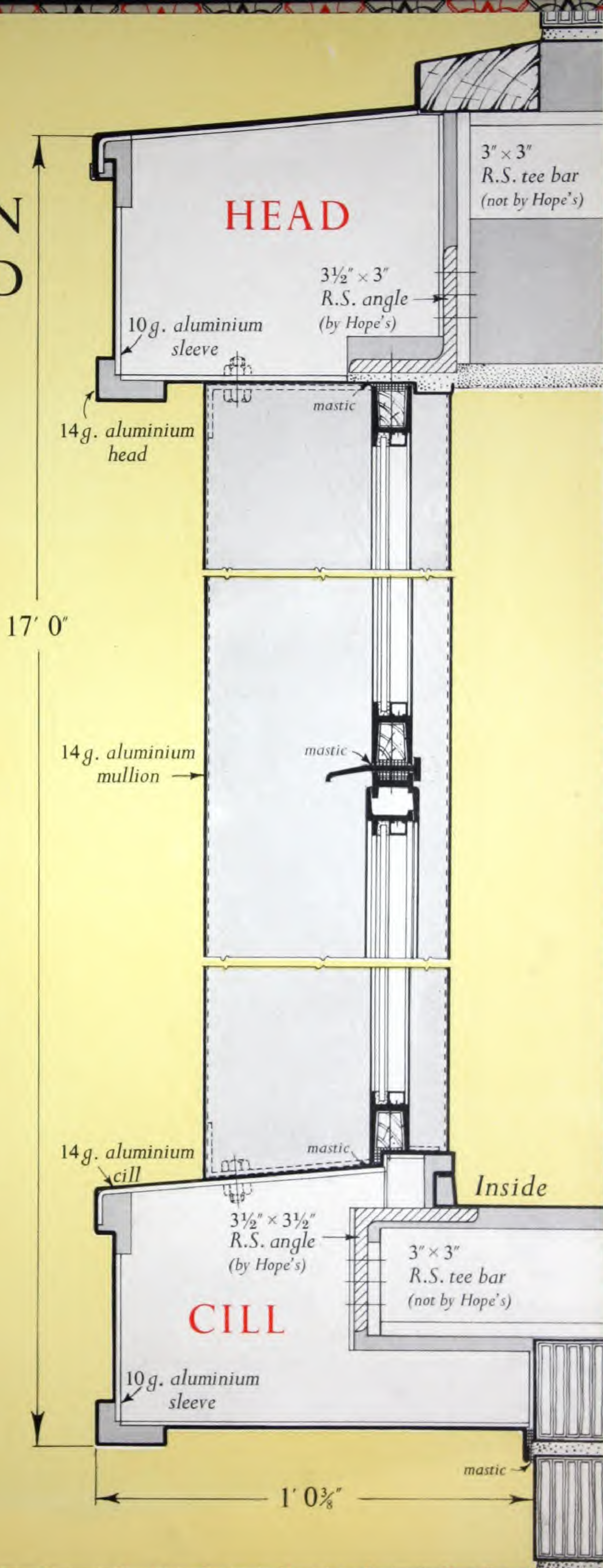
BRITISH RESIN PRODUCTS LTD BARRY

SCALE
4" = 1 foot



MULLION

Aluminium: painted one shop coat
Steel: hot-dip galvanized



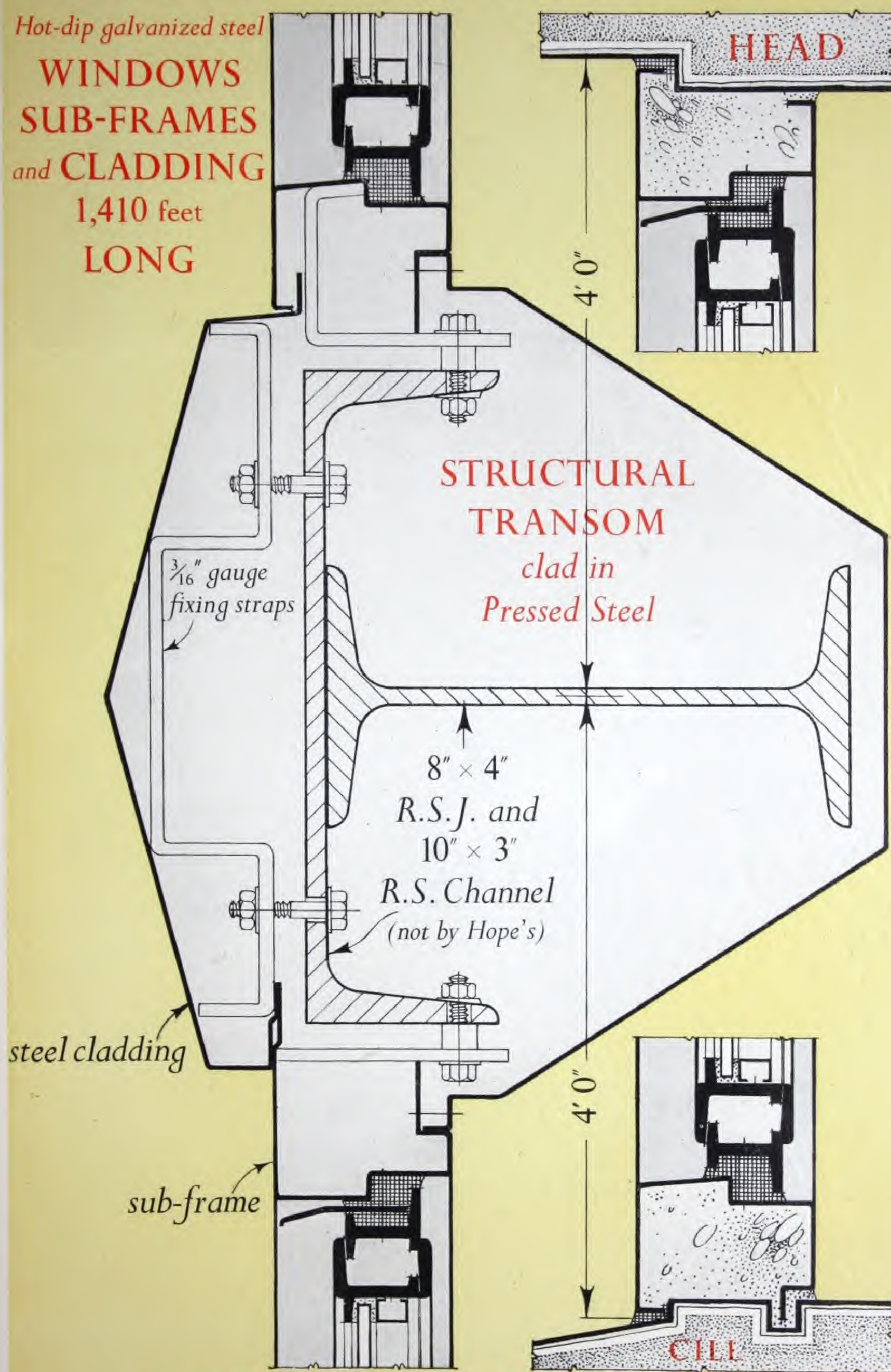


OCEAN DOCK PASSENGER TERMINAL, SOUTHAMPTON
for British Railways, Southern Region

OCEAN DOCK TERMINAL BUILDING, SOUTHAMPTON

Hot-dip galvanized steel

**WINDOWS
SUB-FRAMES
and CLADDING**
1,410 feet
LONG



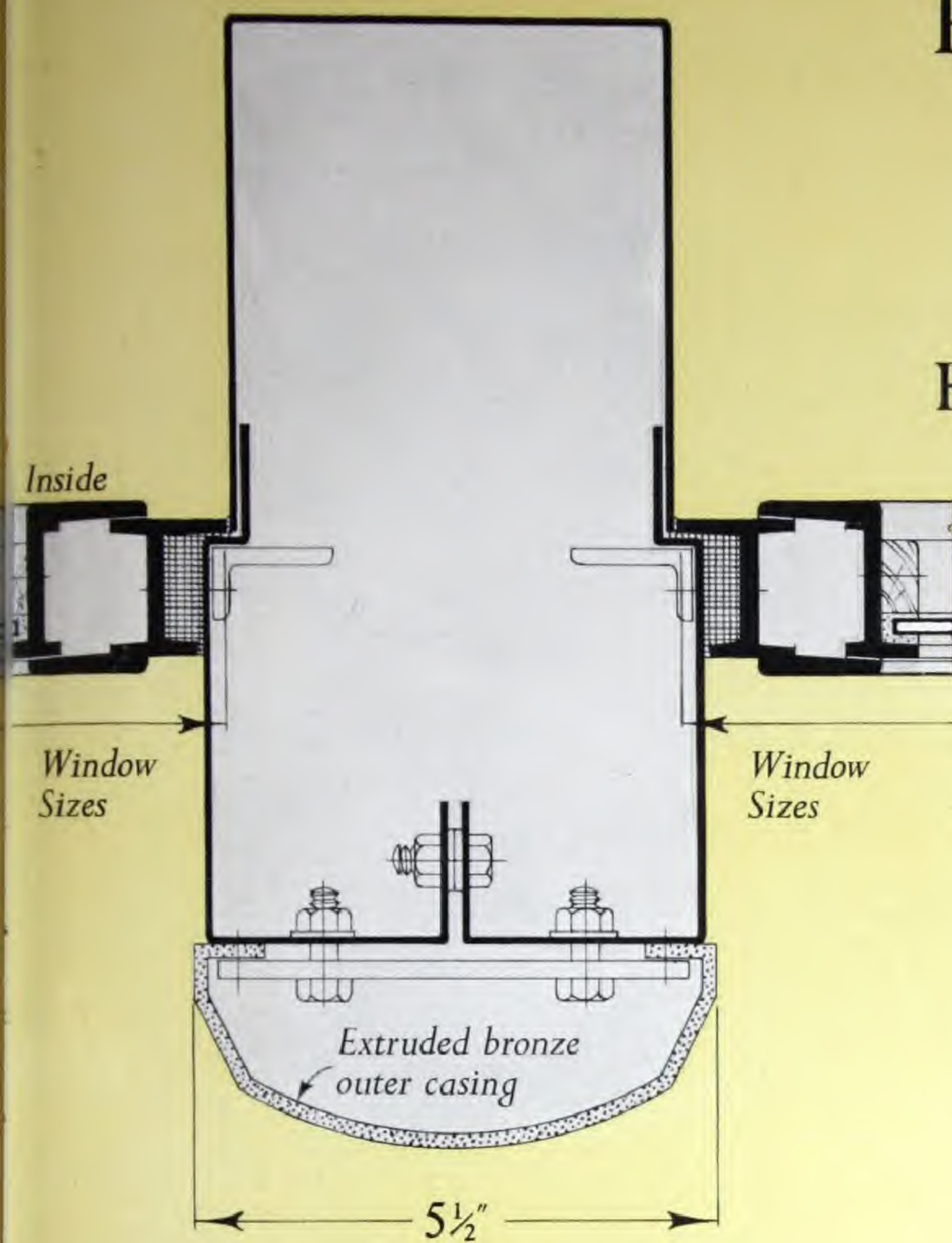
HALF FULL SIZE DETAILS



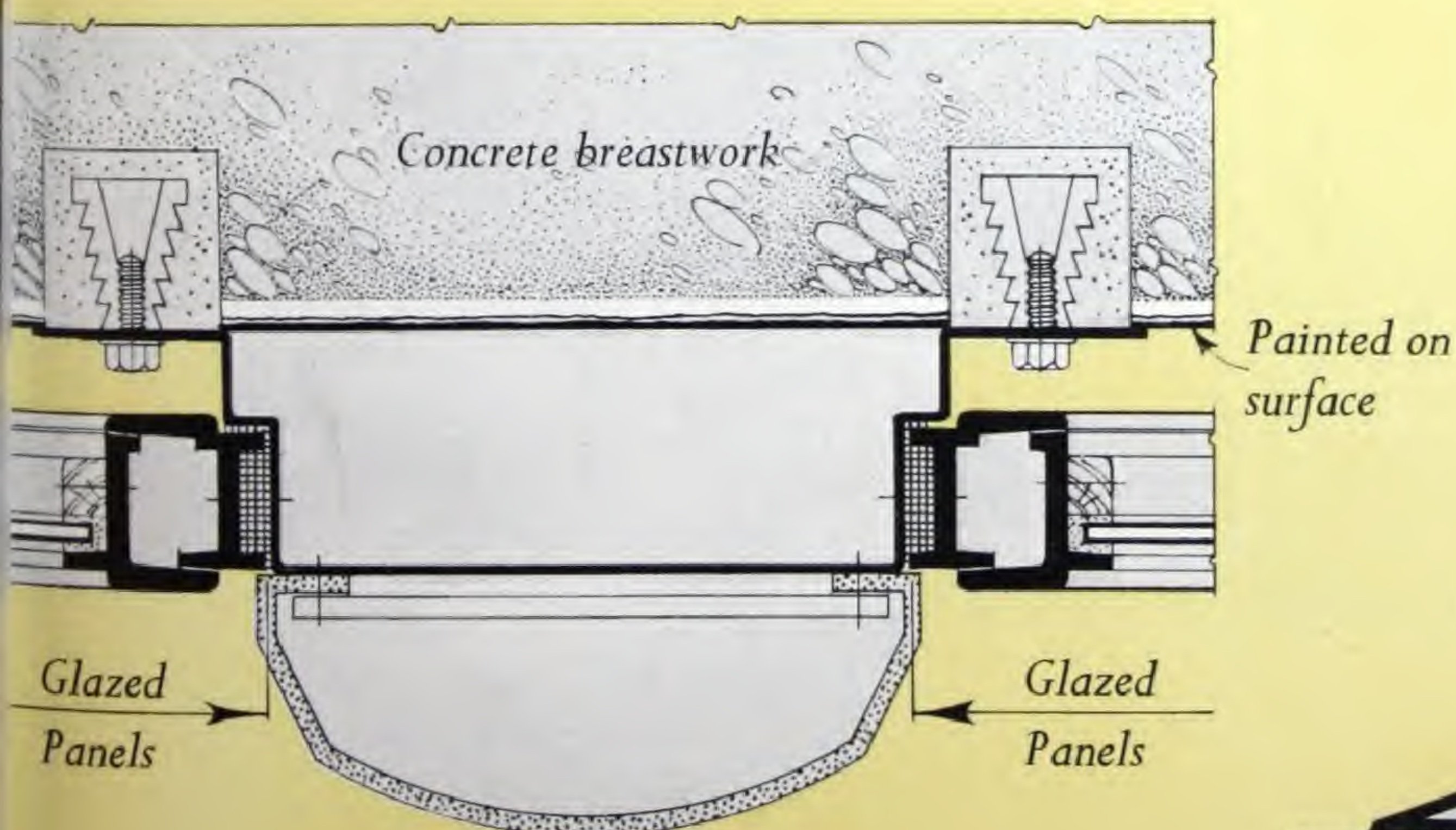
PETER JONES PREMISES, SLOANE SQUARE, LONDON, S.W
Slater & Moberley, FF.R.I.B.A., Architects
Professor C. H. Reilly & W. Crabtree, F.R.I.B.A., Associate Architects

PETER JONES PREMISES LONDON

HALF *Full Size Details*

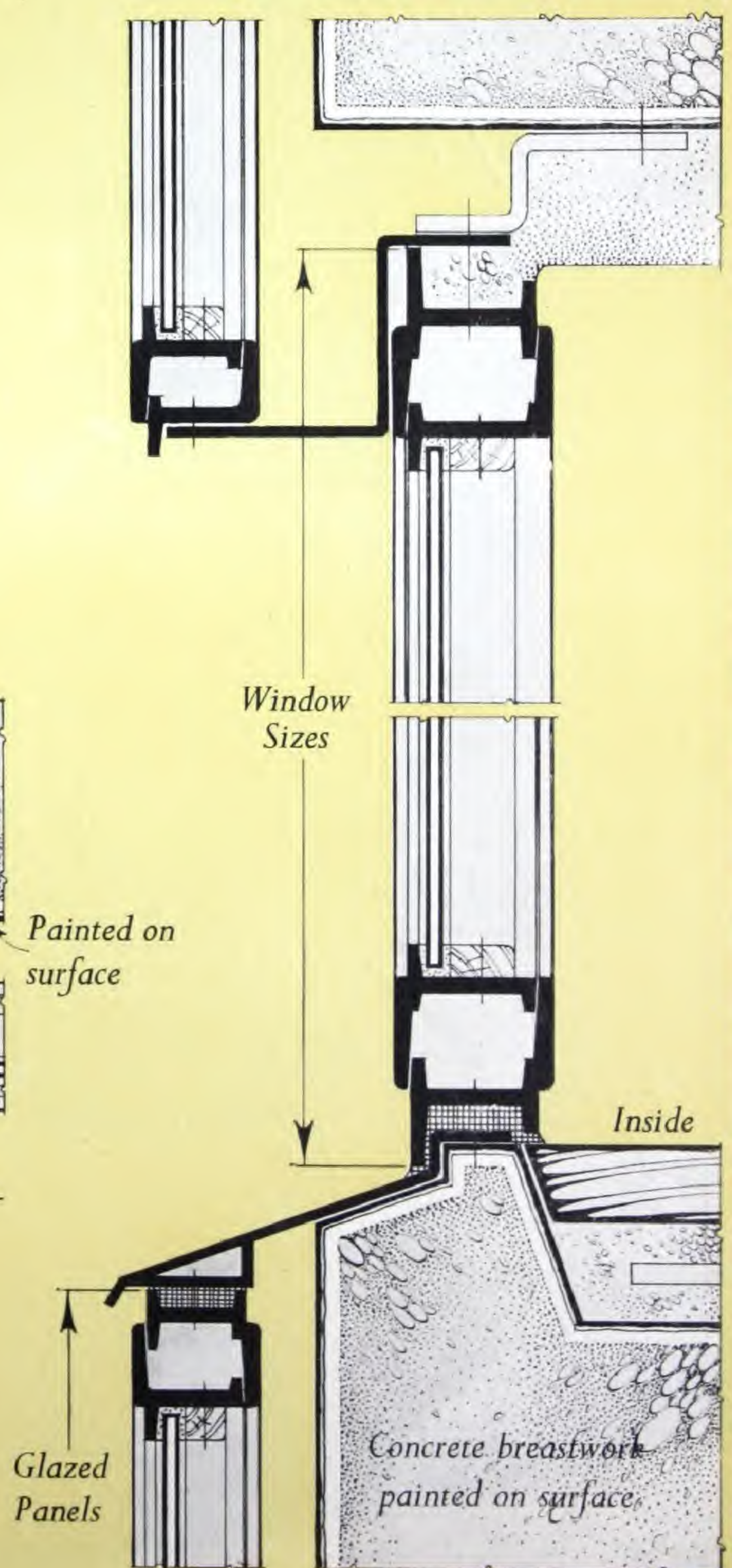


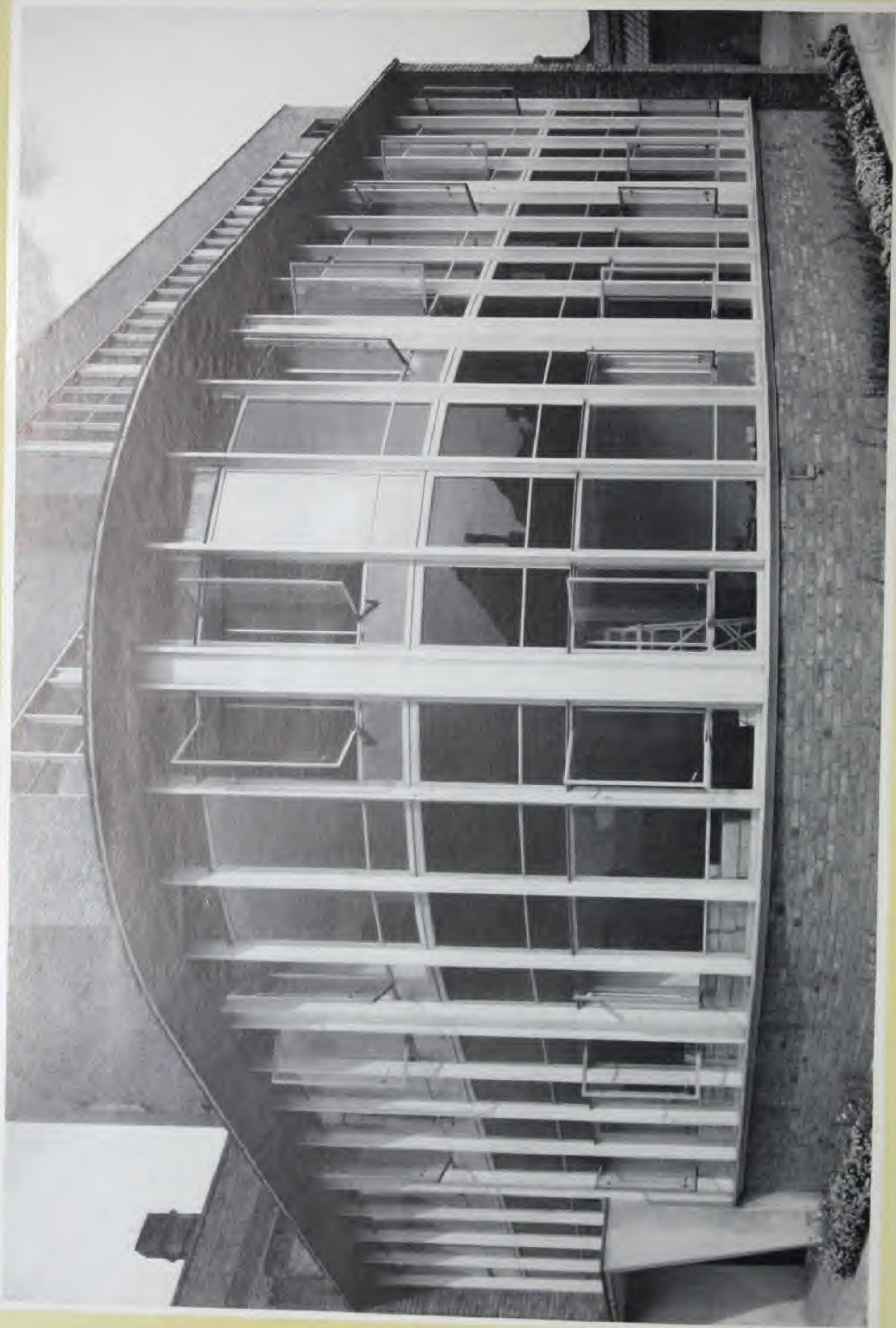
SECTION THROUGH MULLIONS
AT WINDOW LEVEL



SECTION THROUGH MULLIONS

VERTICAL SECTION
THROUGH WINDOWS
AND GLAZED PANELS





CHISWICK TELEPHONE EXCHANGE
Ministry of Works, Architects Division

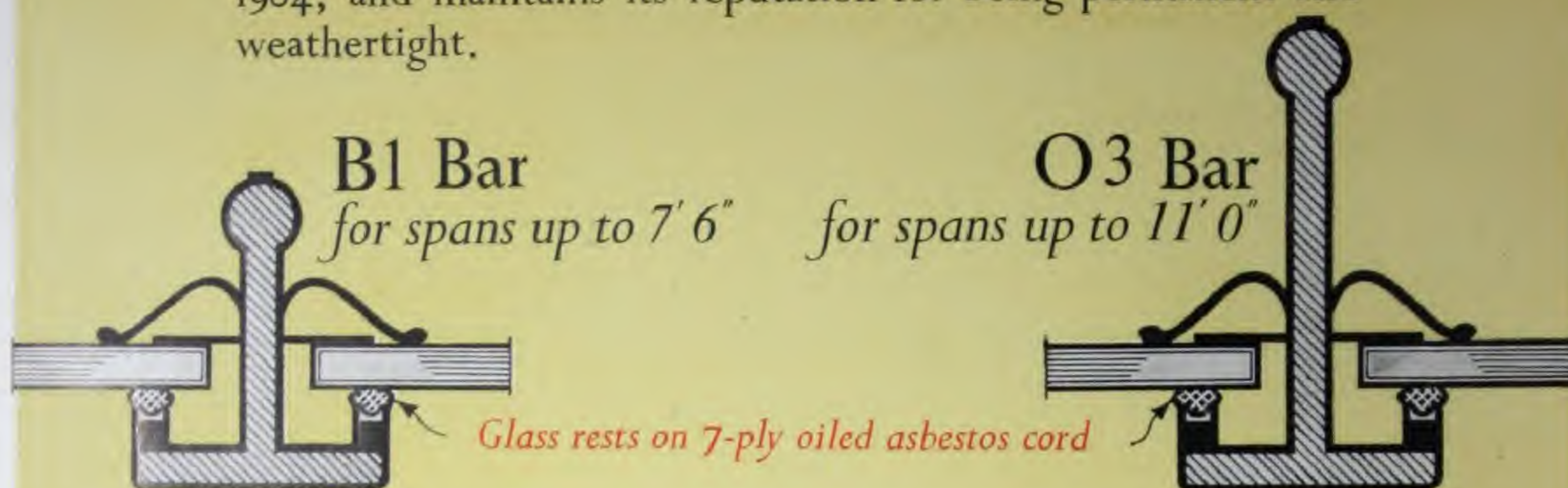
CHISWICK TELEPHONE EXCHANGE

HALF *Full Size Details*

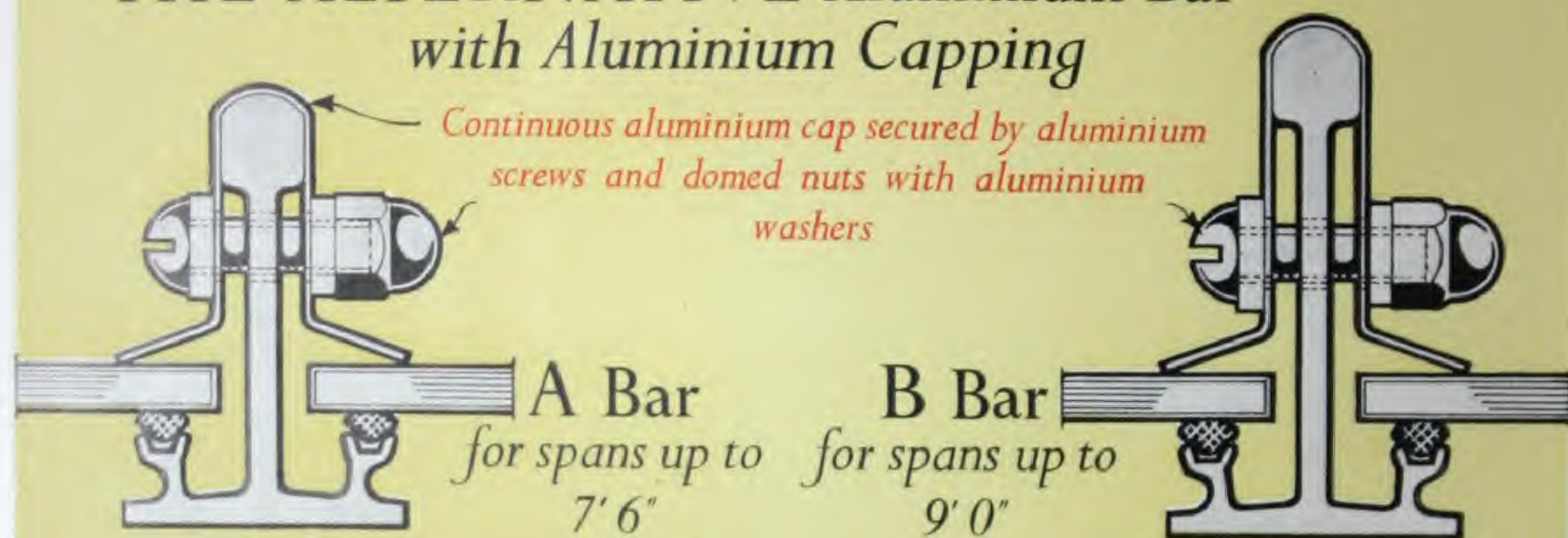


HOPE'S Patent Glazing

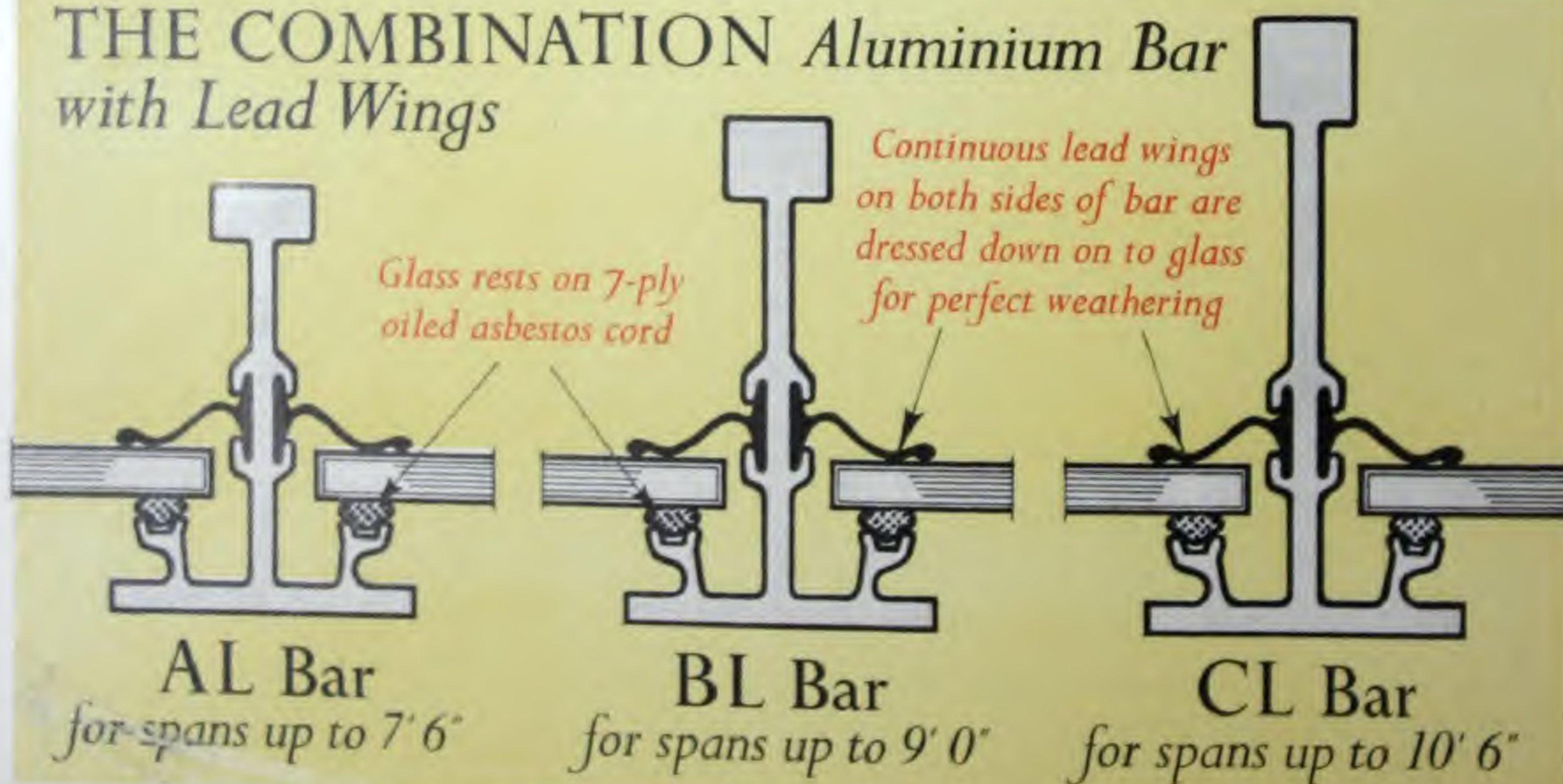
HOPE'S lead-clothed steel glazing bar was first introduced in 1904, and maintains its reputation for being permanent and weathertight.



THE ALTERNATIVE Aluminium Bar with Aluminium Capping

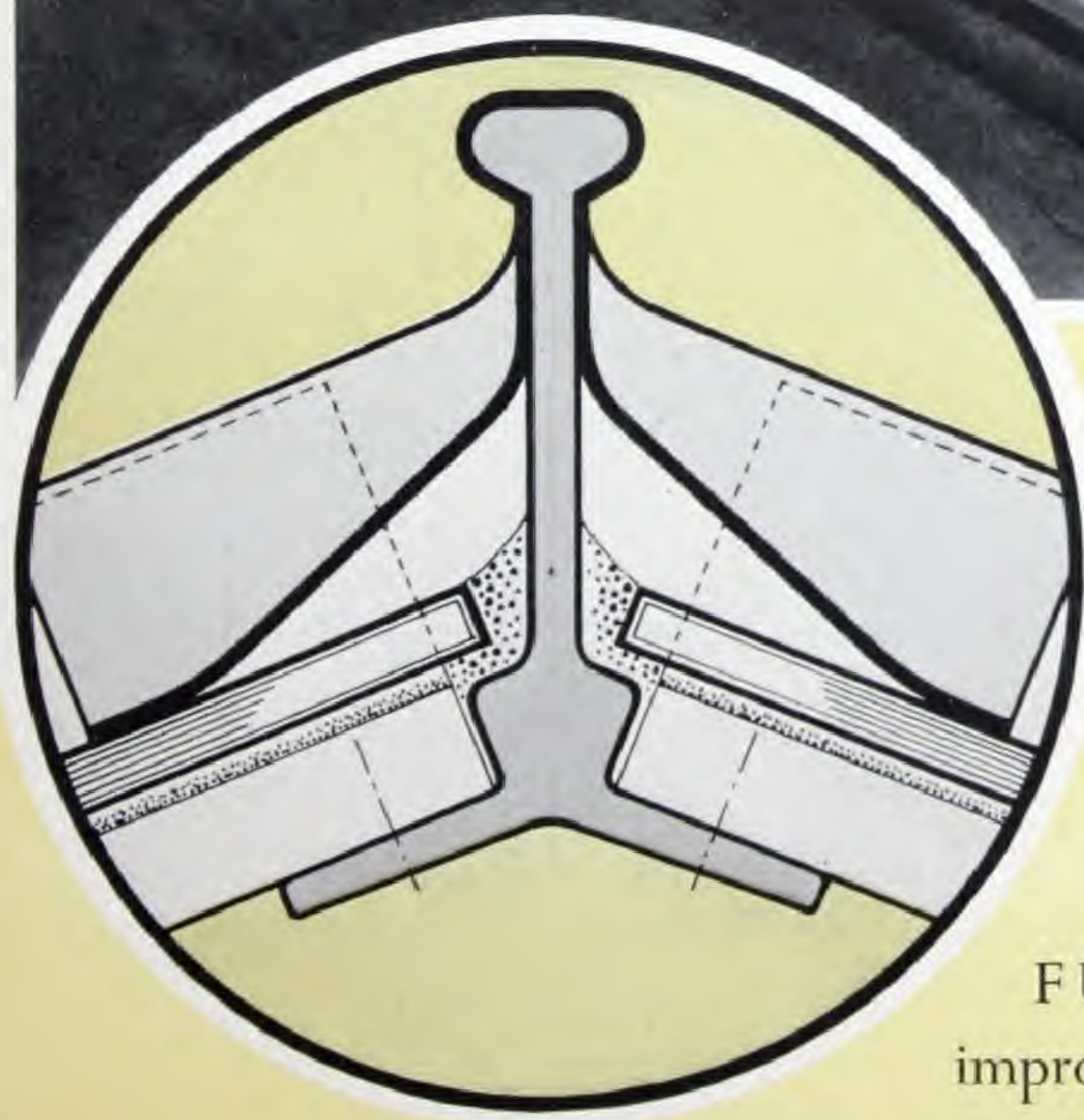


THE COMBINATION Aluminium Bar with Lead Wings



Fully illustrated catalogue of Hope's Patent Glazing No. 255 will be posted on application

HOPE'S *Lanterns & Skylights*



The complete range of standard and purpose-made lanterns and skylights are illustrated in Catalogue No. 255, copies of which will gladly be sent on request.

FULL SIZE Detail of HOPE'S improved steel ridge and hip.

HOPE'S *Industrial Sash*



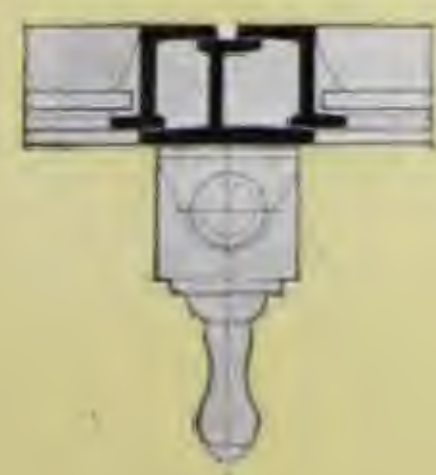
with the famous
LOK'D BAR joint

*Fully illustrated folder of Lok'd Bar Sash
No. 256 will be posted on application.*

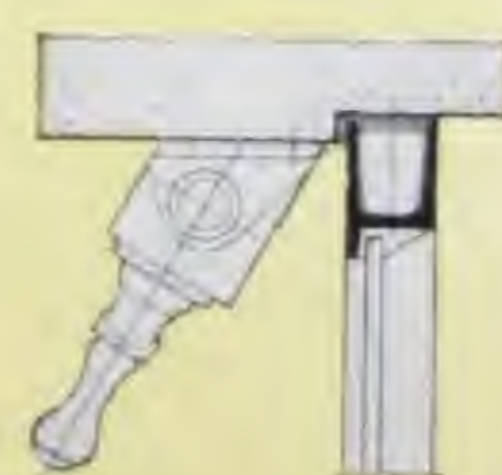
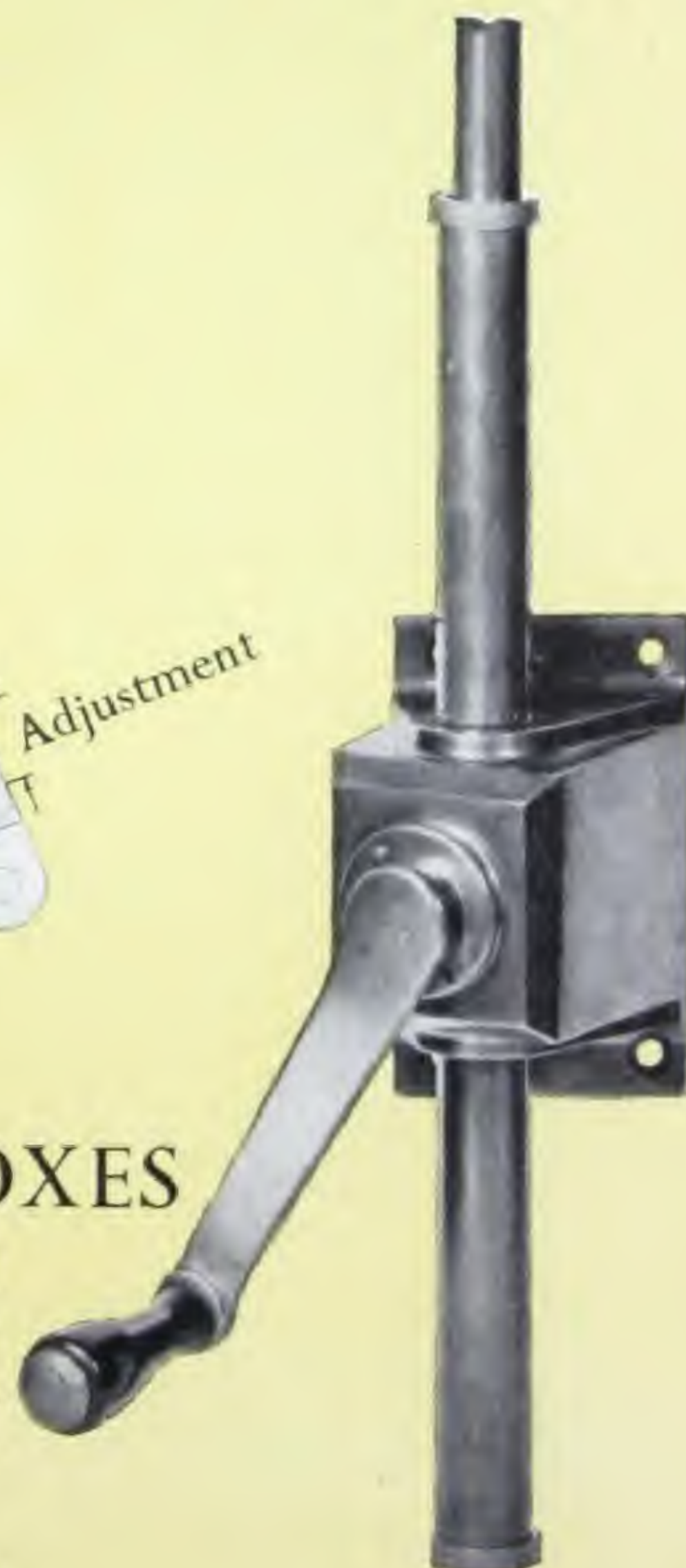
HOPE'S *Gearing*



Tension Rod Gearing operating roof lights
HOPE'S Motor and Worm Reduction Units are totally enclosed and fitted with friction drive and oil seals. They are supplied in five sizes.



KEYED
OPERATING
ARM with
screwed adjustment
(see section)



BRONZE BEVEL GEAR BOXES

On the left is shown our standard box for window mullions and wall surfaces where the movement of the handle is unimpeded.

The angle type, for operating from window reveals, is shown on the right.

HOPE'S *Pressed Metalwork*



STEEL PULPIT *for the* STEEL COMPANY of WALES LTD
PORT TALBOT

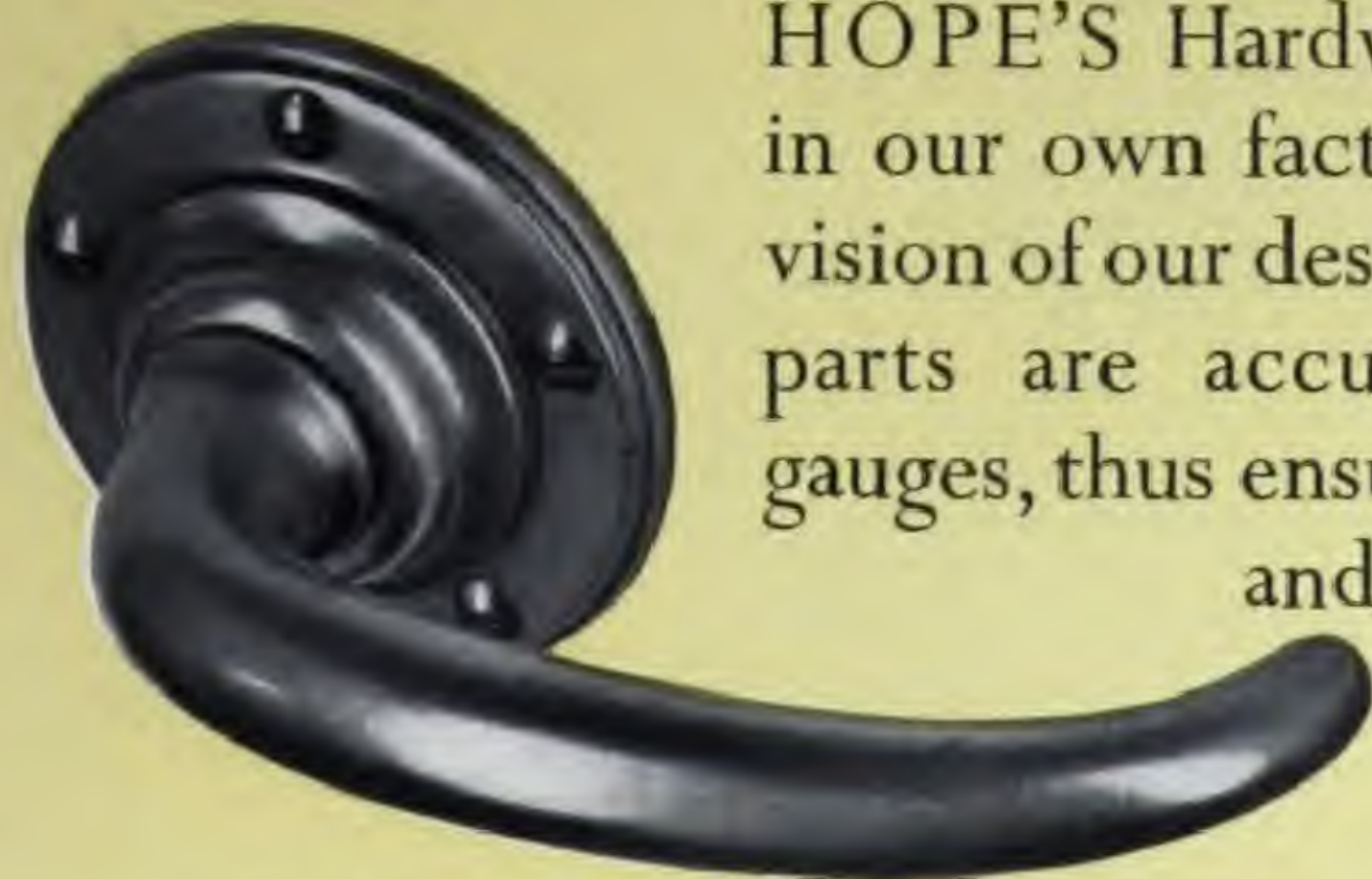
Sir Percy Thomas & Son, P.P./A.R.I.B.A., Architects

W. S. Atkins & Partners, Consulting & Chartered Civil Engineers

This page illustrates an example of pressed metalwork outside the normal use in window frames, door frames, etc. as shown on various pages in this catalogue. Detailed drawings and estimates will gladly be provided

HOPE'S *Hardware*

A selection from Catalogue Nos. 66 & 204



HANDLE
No. 2783

HOPE'S Hardware is manufactured in our own factory under the supervision of our designer, and all working parts are accurately machined to gauges, thus ensuring smooth working and long life



DOOR KNOB
No. 620

METAL LETTERS
in a variety of styles
are available in cast
bronze or aluminium



LEVER HANDLE
AND PLATE
No. 2381

*We are always pleased to
submit designs, working
drawings and estimates
for special work, without
obligation*



GRIP HANDLE
No. 2374

HOPE'S *Standard Windows*



WE introduced the present range of standard steel windows in 1919. The sizes and proportions were settled after consultation with fifteen Architects who each designed a cottage to prove their suitability for modern artisan's houses.

These standards are in use today, not only in Great Britain but in most countries where the English language is spoken, and have been approved by the British Standards Institution. All are hot-dip galvanized.

HOPE'S *Steel Door Frames*



WE introduced these just before the outbreak of the last war and have proved their practical advantages over wood by application to housing schemes all over Great Britain. They are proof against warping and twisting and afford no harbour for lice. Fully illustrated catalogue will be forwarded on request.

HENRY HOPE & SONS LTD SMETHWICK, BIRMINGHAM, 40

Telephone: SMethwick 0891 Telegrams: Conservatory Telex Birmingham

HOPE'S WINDOWS INCORPORATED JAMESTOWN, NEW YORK

Offices & Showrooms: 101 Park Avenue, New York, 17, N.Y.

LONDON 17 Berners Street, London, W.1

Telephone: MUSeum 8412

BELFAST Scottish Temperance Buildings

16 Donegall Sq. South. *Telephone: Belfast 22687*

BIRMINGHAM City Chambers, 319 Broad St., Birmingham, 1

Telephone: MIDland 0398

BRISTOL 3 Berkeley Square, Bristol, 8

Telephone: Bristol 21652

CAMBRIDGE 1 Jesus Lane

GLASGOW 1 Blythswood Square, Glasgow, C.2

Telephone: DOUglas 4170

LEEDS Provincial House, Albion Street

Telephone: Leeds 20708-9

LEICESTER 91 Scraftoft Lane

LIVERPOOL 49 Rodney Street

Telephone: Royal 1594

MANCHESTER 123-124 Manchester Royal Exchange

Telephone: BLAckfriars 8310

NEWCASTLE-ON-TYNE 7 Matlock Gardens, Westerhope

NOTTINGHAM 4 Cotgrave Road, Plumtree, Notts

PLYMOUTH & EXETER 'Oaklands', Honiton, Devon

Telephone: Honiton 279

SOUTHAMPTON 53 Bassett Green Road, Swaythling

Telephone: Southampton 57452

SWANSEA Exchange Buildings

Telephone: Swansea 55342

AGENTS ALL OVER THE WORLD

INDEX

Introduction	Page 4
Specification	Page 5
Galvanizing	Pages 6 & 7
Medium Sections	Pages 8 & 9
Heavy Sections	Pages 10 & 11
Coupling Bars	Page 12
Welds & Couplings	Page 13
Mullions	Page 14
Glazing Bars	Page 15
Side Hung Casement, opening outwards	Page 16
Side Hung Casement, opening inwards	Page 17
Vertically Pivoted Casement	Page 18
Horizontally Pivoted Casement	Page 19
Top Hung, opening outwards	Page 20
Bottom Hung, opening inwards	Page 21
French Casements, open out	Page 22
French Casements, open in	Page 23
Composite 'Z' type	Page 24
Composite 'Y' type	Page 25
Composite 'W' type	Page 26
Composite 'X' type	Page 27
Austral Windows	Pages 28 & 29
Sliding & Folding Windows	Pages 30 & 31
Sliding & Folding Doors	Pages 32 & 33
Casement Doors	Pages 34 & 35
Casement Doors in Heavy Section	Pages 36 & 37
Fixing Details	Pages 38 to 45
Instructions for fixing	Page 46
Patent Fixing Lug	Page 47
Glazing Instructions for screwless steel bead	Pages 48 & 49
Fittings	Pages 50 & 51
Door Furniture	Page 52
Swing Doors	Page 53
Flyscreens	Pages 54 & 55
Steel Sub-frames	Pages 56 & 57
Sound-resisting Windows	Pages 58 to 63
Bronze Windows	Pages 64 to 72
School Windows	Pages 73 to 85
Power Station Windows	Pages 86 to 103
Signal Cabin Windows	Pages 104 to 107
Photographs of Important Buildings	Pages 109 to 143
HOPE'S Departments	Pages 144 to 150
Branch Offices	Page 151



